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G. H. F. Gregory

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1778



S K E T C H E S
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H I S T O R Y
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M A N.

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A SECOND EDITION.

James Henry
IN FOUR VOLUMES.

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	1222	1223	1224	1225	1226	1227	1228	1229	1230	1231	1232	1233	1234	1235	1236	1237	1238	1239	1240	1241	1242	1243	1244	1245	1246	1247	1248	1249	1250	1251	1252	1253	1254	1255	1256	1257	1258	1259	1260	1261	1262	1263	1264	1265	1266	1267	1268	1269	1270	1271	1272	1273	1274	1275	1276	1277	1278	1279	1280	1281	1282	1283	1284	1285	1286	1287	1288	1289	1290	1291	1292	1293	1294	1295	1296	1297	1298	1299	1300	1301	1302	1303	1304	1305	1306	1307	1308	1309	1310	1311	1312	1313	1314	1315	1316	1317	1318	1319	1320	1321	1322	1323	1324	1325	1326	1327	1328	1329	1330	1331	1332	1333	1334	1335	1336	1337	1338	1339	1340	1341	1342	1343	1344	1345	1346	1347	1348	1349	1350	1351	1352	1353	1354	1355	1356	1357	1358	1359	1360	1361	1362	1363	1364	1365	1366	1367	1368	1369	1370	1371	1372	1373	1374	1375	1376	1377	1378	1379	1380	1381	1382	1383	1384	1385	1386	1387	1388	1389	1390	1391	1392	1393	1394	1395	1396	1397	1398	1399	1400	1401	1402	1403	1404	1405	1406	1407	1408	1409	1410	1411	1412	1413	1414	1415	1416	1417	1418	1419	1420	1421	1422	1423	1424	1425	1426	1427	1428	1429	1430	1431	1432	1433	1434	1435	1436	1437	1438	1439	1440	1441	1442	1443	1444	1445	1446	1447	1448	1449	1450	1451	1452	1453	1454	1455	1456	1457	1458	1459	1460	1461	1462	1463	1464	1465	1466	1467	1468	1469	1470	1471	1472	1473	1474	1475	1476	1477	1478	1479	1480	1481	1482	1483	1484	1485	14
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	--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CONTENTS of this Volume.

B O O K II. Continued.

Sk.	Pag.
9. <i>Military branch of government,</i>	1
10. <i>Public police with respect to the poor,</i>	63
11. <i>A great city considered in physical, moral, and political views,</i>	116
12. <i>Origin and progress of American nations,</i>	134

B O O K III.

Progress of Sciences.

Sk.	Pag.
1. <i>Principles and progress of reason,</i>	186
<i>Seft,</i>	
1. <i>Principles of reason,</i>	186
2. <i>Progress of reason,</i>	217
<i>Appendix,</i>	300
<i>A brief account of Aristotle's logic. With remarks,</i>	305
<i>Chap.</i>	
1. <i>Of the first three treatises,</i>	ib.
2. <i>Remarks,</i>	317
3. <i>Account of the First Analytics,</i>	347
4. <i>Remarks,</i>	359
5. <i>Account of the remaining books of the Organon,</i>	391
6. <i>Reflections on the utility of logic, and the means of its improvement,</i>	407

S K E T C H E S
O F T H E
H I S T O R Y O F M A N.

B O O K I I.
Progress of MEN IN SOCIETY.

S K E T C H I X.

Military Branch of Government.

DURING the infancy of a nation, every member depends on his own industry for procuring the necessaries of life : he is his own mason, his own tailor, his own physician ; and on himself he chiefly relies for offence as well as defence. Every savage can say, what few beggars among us can say, *Omnia mea mecum porto* ; and hence the apti-

VOL. III. A tude

tude of a savage for war, which makes little alteration in his manner of living. In early times accordingly, the men were all warriors, and every known art was exercised by women ; which continues to be the case of American savages. And even after arts were so much improved as to be exercised by men, none who could bear arms were exempted from war. In feudal governments, the military spirit was carried to a great height : all gentlemen were soldiers by profession ; and every other art was despised, as low, if not contemptible.

Even in the unnatural state of the feudal system, arts made some progress, not excepting those for amusement ; and many conveniencies, formerly unknown, became necessary to comfortable living. A man accustomed to manifold conveniencies, cannot bear with patience to be deprived of them : he hates war, and clings to the sweets of peace. Hence the necessity of a military establishment, hardening men by strict discipline to endure the fatigues of war. By a standing army, war is carried on more regularly and scientifically than in a feudal government ; but as it is carried on with infinitely greater expence, nations

tions are more reserved in declaring war than formerly. Long experience has at the same time made it evident, that a nation seldom gains by war; and that agriculture, manufactures, and commerce, are the only solid foundations of power and grandeur. These arts accordingly have become the chief objects of European governments, and the only rational causes of war. Among the warlike nations of Greece and Italy, how would it have founded, that their effeminate descendants would employ soldiers by profession to fight their battles! And yet this is unavoidable in every country where arts and manufactures flourish; which, requiring little exercise, tend to enervate the body, and of course the mind. Gain, at the same time, being the sole object of industry, advances selfishness to be the ruling passion, and brings on a timid anxiety about property and self-preservation. Cyrus, tho' enflamed with resentment against the Lydians for revolting, listened to the following advice, offered by Cræsus, their former King. "O Cyrus, destroy not
" Sardis, an ancient city, famous for arts
" and arms; but, pardoning what is past,
A 2 " demand

“ demand all their arms, encourage luxury, and exhort them to instruct their children in every art of gainful commerce. You will soon see, O King, that instead of men, they will be women.”

The Arabians, a brave and generous people, conquered Spain; and drove into the inaccessible mountains of Biscay and Asturia, the few natives who stood out. When no longer an enemy appeared, they turned their swords into ploughshares, and became a rich and flourishing nation. The inhabitants of the mountains, hardened by poverty and situation, ventured, after a long interval, to peep out from their strong holds, and to lie in wait for straggling parties. Finding themselves now a match for a people, whom opulence had betrayed to luxury and the arts of peace to cowardice; they took courage to display their banners in the open field; and after many military achievements, succeeded in reconquering Spain. The Scots, inhabiting the mountainous parts of Caledonia, were an overmatch for the Picts, who occupied the fertile plains, and at last subdued them*.

* See the note on the following page.

Benjamin de Tudele, a Spanish Jew, who wrote in the twelfth century, observes, that by luxury and effeminacy the Greeks had contracted a degree of softness, more proper for women than for men; and that the Greek Emperor was reduced to the necessity of employing mercenary troops, to defend his country against the Turks. In the year 1453, the city of Constantinople, defended by a garrison not exceeding 6000 men, was besieged by the Turks, and reduced to extremity; yet

A note referred to in the preceding page.

* Before the time that all Scotland was brought under one king, the highlanders, divided into tribes or clans, made war upon each other; and continued the same practice irregularly many ages after they submitted to the king of Scotland. Open war was repressed, but it went on privately by depredations and reprisals. The clan-spirit was much depressed by their bad success in the rebellion 1715; and totally crushed by the like bad success in the rebellion 1745. The mildness with which the highlanders have been treated of late, and the pains that have been taken to introduce industry among them, have totally extirpated depredations and reprisals, and have rendered them the most peaceable people in Scotland; but have at the same time reduced their military spirit to a low ebb. To train them for war, military discipline has now become no less necessary than to others.

not

not a single inhabitant had courage to take arms, all waiting with torpid despondence the hour of utter extirpation. Venice, Genoa, and other small Italian states, became so effeminate by long and successful commerce, that not a citizen ever thought of serving in the army; which obliged them to employ mercenaries, officers as well as private men. These mercenaries at first, fought conscientiously for their pay; but reflecting, that the victors were no better paid than the vanquished, they learned to play booty. In a battle particularly between the Pisans and Florentines, which lasted from sun-rising to sun-setting, there was but a single man lost, who, having accidentally fallen from his horse, was trodden under foot. Men at that time fought on horseback, covered with iron from head to heel. Machiavel mentions a battle between the Florentines and Venetians which lasted half a day, neither party giving ground; some horses, wounded, not a man slain. He observes, that such cowardice and disorder was in the armies of those times, that the turning of a single horse either to charge or retreat, would have decided a battle.

Charles

Charles VIII. of France, when he invaded Italy *anno* 1498, understood not such mock battles; and his men were held to be devils incarnate, who seemed to take delight in shedding human blood. The Dutch, who for many years have been reduced to mercenary troops, are more indebted to the mutual jealousy of their neighbours for their independence, than to their own army. In the year 1672, Lewis of France invaded Holland, and in forty days took forty walled towns. That country was saved, not by its army, but by being laid under water. Frost, which is usual at that season, would have put an end to the seven United Provinces.

The small principality of Palmyra is the only instance known in history, where the military spirit was not enervated by opulence. Pliny describes that country as extremely pleasant, and blessed with plenty of springs, tho' surrounded with dry and sandy deserts. The commerce of the Indies was at that time carried on by land; and the city of Palmyra was the centre of that commerce between the East and the West. Its territory being very small, little more than sufficient for villas and pleasure-

ture-grounds, the inhabitants, like those of Hamburgh, had no way to employ their riches for profit but in trade. At the same time, being situated between the two mighty empires of Rome and Parthia; it required great address and the most assiduous military discipline, to guard it from being swallowed up by the one or the other. This ticklish situation preserved the inhabitants from luxury and effeminacy, the usual concomitants of riches. Their superfluous wealth was laid out on magnificent buildings, and on embellishing their country-seats. The fine arts were among them carried to a high degree of perfection. The famous Zenobia, their Queen, being led captive to Rome after being deprived of her dominions, was admired and celebrated for spirit, for learning, and for an exquisite taste in the fine arts.

Thus, by accumulating wealth, a manufacturing and commercial people become a tempting object for conquest; and by effeminacy become an easy conquest. The military spirit seems to be at a low ebb in Britain: will no phantom appear, even in a dream, to disturb our downy

rest? Formerly, plenty of corn in the temperate regions of Europe and Asia, proved a tempting bait to northern savages who wanted bread: have we no cause to dread a similar fate from some warlike neighbour, impelled by hunger, or by ambition, to extend his dominions? The difficulty of providing for defence, consistent with industry, has produced a general opinion among political writers, that a nation, to preserve its military spirit, must give up industry; and to preserve industry, must give up a military spirit. In the former case, we are secure against any invader: in the latter, we lie open to every invader. A military plan that would secure us against enemies, without hurting our industry and manufactures, would be a rich present to Britain. That such a plan is possible, will appear from what follows; tho' I am far from hoping that it will meet with universal approbation. To prepare the reader, I shall premise an account of the different military establishments that exist, and have existed, in Europe, with the advantages and disadvantages of each. In examining these, who

knows whether some hint may not occur of a plan more perfect than any of them.

The most illustrious military establishment of antiquity is that of the Romans, by which they subdued almost all the known world. The citizens of Rome were all of them soldiers: they lived upon their pay when in the field; but if they happened not to be successful in plundering, they starved at home. An annual distribution of corn among them, became necessary; which in effect corresponded to the halfpay of our officers. It is believed, that such a constitution would not be adopted by any modern state. It was a forc'd constitution; contrary to nature, which gives different dispositions to men, in order to supply hands for every necessary art. It was a hazardous constitution, having no medium between universal conquest and wretched slavery. Had the Gauls who conquered Rome, entertained any view but of plunder, Rome would never have been heard of. It was on the brink of ruin in the war with Hannibal. What would have happened had Hannibal been victorious? It is easy to judge, by comparing it with Carthage. Carthage

thage was a commercial state, the people all employ'd in arts, manufactures, and navigation. The Carthaginians were subdued; but they could not be reduced to extremity, while they had access to the sea. In fact, they prospered so much by commerce, even after they were subdued, as to raise jealousy in their masters; who thought themselves not secure while a house remained in Carthage. On the other hand, what resource for the inhabitants of Rome, had they been subdued? They must have perished by hunger; for they could not work. In a word, ancient Rome resembles a gamester who ventures all upon one decisive throw: if he lose, he is undone.

I take it for granted, that our feudal system will not have a single vote. It was a system that led to confusion and anarchy, as little fitted for war as for peace. And as for mercenary troops, it is unnecessary to bring them again into the field, after what is said of them above.

The only remaining forms that merit attention, are a standing army, and a militia; which I shall examine in their order, with the objections that lie against

each. The first standing army in modern times was established by Charles VII. of France, on a very imperfect plan. He began with a body of cavalry termed *companies of ordonnance*. And as for infantry, he, anno 1448, appointed each parish to furnish an archer: these were termed *franc-archers*, because they were exempted from all taxes. This little army was intended for restoring peace and order at home, not for disturbing neighbouring states. The King had been forc'd into many perilous wars, some of them for restraining the turbulent spirit of his vassals, and most of them for defending his crown against an ambitious adversary, Henry V. of England. As these wars were carried on in the feudal mode, the soldiers, who had no pay, could not be restrained from plundering; and inveterate practice rendered them equally licentious in peace and in war. Charles, to leave no pretext for free quarters, laid upon his subjects a small tax, no more than sufficient for regular pay to his little army *.

First

* This was the first tax imposed in France without consent of the three estates: and, however unconstitutional,

First attempts are commonly crude and defective. The franc-archers, dispersed one by one in different villages, and never collected but in time of action, could not easily be brought under regular discipline: in the field, they display'd nothing but vicious habits, a spirit of laziness, of disorder, and of pilfering. Neither in peace were they of any use: their character of foldier made them despise agriculture; without being qualified for war: in the army they were no better than peasants: at the plough, no better than idle soldiers. But in the hands of a monarch, a standing army is an instrument of power, too valuable ever to be abandoned: if one sove-

constitutional, it occasioned not the slightest murmur, because its visible good tendency reconciled all the world to it. Charles, beside, was a favourite of his people; and justly, as he shewed by every act his affection for them. Had our first Charles been such a favourite, who knows whether the taxes he imposed without consent of parliament, would have met with any opposition? Such taxes would have become customary, as in France; and a limited monarchy would, as in France, have become absolute. Governments, like men, are liable to many revolutions: we remain, it is true, a free people; but for that blessing we are perhaps more indebted to fortune, than to patriotic vigilance,

reign

reign entertain such an army, others in self-defence must follow. Standing armies are now established in every European state, and are brought to a competent degree of perfection.

This new instrument of government, has produced a surprising change in manners. We now rely on a standing army, for defence as well as offence: none but those who are trained to war, ever think of handling arms, or even of defending themselves against an enemy: our people have become altogether effeminate, terrified at the very sight of a hostile weapon. It is true, they are not the less qualified for the arts of peace; and if manufacturers be protected from being obliged to serve in the army, I discover not any incompatibility between a standing army and the highest industry. Husbandmen at the same time make the best soldiers: a military spirit in the lower classes arises from bodily strength, and from affection to their natal soil. Both are eminent in the husbandman: constant exercise in the open air renders him hardy and robust; and fondness for the place where he finds comfort and plenty, attaches him to his country

country in general *. An artist or manufacturer, on the contrary, is attached to no country but where he finds the best bread ; and a sedentary life, enervating his body, renders him pusillanimous. For these reasons, among many, agriculture ought to be honoured and cherished above all other arts. It is not only a fine preparation

* Numquam credo potuisse dubitari, aptiorem armis rusticam plebem, quæ sub divo et in labore nutritur ; solis patiens ; umbræ negligens ; balnearum nescia ; deliciarum ignara ; simplicis animi ; parvo contenta ; duratis ad omnem laborum tolerantiam membris : cui gestare ferrum, fossam ducere, onus ferre, consuetudo de rure est. Nec inficiandum est, post urbem conditam, Romanos ex civitate profectos semper ad bellum : sed tunc nullis voluptatibus, nullis deliciis frangebantur. Sudorem cursu et campestri exercitio collectum nando juvenis abluebat in Tybere. Idem bellator, idem agricola, genera tantum mutabat armorum. *Vegetius, De re militari, l. 1. cap. 3.*— [*In English thus* : “ I believe it was never doubted, that the country-labourers were, of all others, the best soldiers. Inured to the open air, and habitual toil, subjected to the extremes of heat and cold, ignorant of the use of the bath, or any of the luxuries of life, contented with bare necessities, there was no severity in any change they could make : their limbs, accustomed to the use of the spade and plough, and habituated to burden, were capable
“ of

preparation for war, by breeding men who love their country, and whom labour and sobriety qualify for being soldiers ; but is also the best foundation for commerce, by furnishing both food and materials to the industrious.

But several objections occur against a standing army, that call aloud for a better model than has hitherto been established, at least in Britain. The subject is interesting, and I hope for attention from every man who loves his country. During the vigour of the feudal system which made every land-proprietor a soldier, every inch of ground was tenaciously disputed with an invader : and while a sovereign retained any part of his dominions, he never lost hopes of recovering the whole. At present, we rely entirely on a standing

“ of the utmost extremity of toil. Indeed, in the
 “ earliest ages of the commonwealth, while the city
 “ was in her infancy, the citizens marched out from
 “ the town to the field : but at that time they were
 “ not enfeebled by pleasures, nor by luxury : The
 “ military youth, returning from their exercise and
 “ martial sports, plunged into the Tyber to wash
 “ off the sweat and dust of the field. The warrior
 “ and the husbandman were the same, they changed only the nature of their arms.”]

army, for defence as well as offence; which has reduced every nation in Europe, to a precarious state. If the army of a nation happen to be defeated, even at the most distant frontier, there is little resource against a total conquest. Compare the history of Charles VII. with that of Lewis XIV. Kings of France. The former, tho' driven into a corner by Henry V. of England, was however far from yielding: on the contrary, relying on the military spirit of his people, and indefatigably intent on stratagem and surprise, he recovered all he had lost. When Lewis XIV. succeeded to the crown, the military spirit of the people was contracted within the narrow span of a standing army. Behold the consequence. That ambitious monarch, having provoked his neighbours into an alliance against him, had no resource against a more numerous army, but to purchase peace by an abandon of all his conquests, upon which he had lavished much blood and treasure (*a*). France at that period contained several millions capable of bearing arms; and yet was not in a condition

(*a*) Treaty of St Gertrudenberg.

to make head against a disciplined army of 70,000 men. Poland, which continues upon the ancient military establishment, wearied out Charles XII. of Sweden; and had done the same to several of his predecessors. But Saxony, defended only by a standing army, could not hold out a single day against the prince now mentioned, at the head of a greater army. Mercenary troops are a defence still more feeble, against troops that fight for glory, or for their country. Unhappy was the invention of a standing army; which, without being any strong bulwark against enemies, is a grievous burden on the people; and turns daily more and more so. Listen to a first-rate author on that point. “ Sitôt
“ qu’ un état augmente ce qu’il appelle
“ ses troupes, les autres augmentent les
“ leurs; de façon qu’on ne gagne rien
“ par-là que la ruine commune. Chaque
“ monarque tient sur pied toutes les ar-
“ mées qu’il pourroit avoir si ses peuples
“ étoient en danger d’ être exterminées;
“ et on nomme paix cet état d’effort de
“ tous contre tous. Nous sommes pau-
“ vres avec les richesses et le commerce de
“ tout l’univers; et bientôt à force d’avoir
“ des

“ des foldats, nous n’aurons plus que des
 “ foldats, et nous ferons comme de Tar-
 “ tares * (a).”

But with respect to Britain, and every free nation, there is an objection still more formidable ; which is, that a standing army is dangerous to liberty. It avails very little to be secure against foreign enemies, supposing a standing army to afford security, if we have no security against an enemy at home. If a warlike king, heading his own troops, be ambitious to render himself absolute, there are no means to evade the impending blow ; for what avail the greatest number of effeminate

* “ As soon as one state augments the number of
 “ its troops, the neighbouring states of course do
 “ the same ; so that nothing is gained, and the ef-
 “ fect is, the general ruin. Every prince keeps as
 “ many armies in pay, as if he dreaded the exter-
 “ mination of his people from a foreign invasion ;
 “ and this perpetual struggle, maintained by all a-
 “ gainst all, is termed *peace*. With the riches and
 “ commerce of the whole universe, we are in a state
 “ of poverty ; and by thus continually augmenting
 “ our troops, we shall soon have none else but sol-
 “ diers, and be reduced to the same situation as the
 “ Tartars.”

(a) L'esprit des loix. liv. 13. chap. 17.

cowards against a disciplined army, devoted to their prince, and ready implicitly to execute his commands? In a word, by relying entirely on a standing army, and by trusting the sword in the hands of men who abhor the restraints of civil law, a solid foundation is laid for military government. Thus a standing army is dangerous to liberty, and yet no sufficient bulwark against powerful neighbours.

Deeply sensible of the foregoing objections, Harrington proposes a militia as a remedy. Every male between eighteen and thirty, is to be trained to military exercises, by frequent meetings, where the youth are excited by premiums to contend in running, wrestling, shooting at a mark, &c. &c. But Harrington did not advert, that such meetings, enflaming the military spirit, must create an aversion in the people to dull and fatiguing labour. His plan evidently is inconsistent with industry and manufactures: it would be so at least in Britain. An unexceptionable plan it would be, were defence our sole object; and not the less so by reducing Britain to such poverty as scarce to be a tempting conquest. Our late war with France is a conspicuous instance

instance of the power of a commercial state, entire in its credit ; a power that amaz'd all the world, and ourselves no less than others. Politicians begin to consider Britain, and not France, to be the formidable power that threatens universal monarchy. Had Harrington's plan been adopted, Britain must have been reduced to a level with Sweden or Denmark, having no ambition but to draw subsidies from its more potent neighbours.

In Switzerland, it is true, boys are, from the age of twelve, exercised in running, wrestling, and shooting. Every male who can bear arms is regimented, and subjected to military discipline. Here is a militia in perfection upon Harrington's plan, a militia neither forc'd nor mercenary ; invincible when fighting for their country. And as the Swiss are not an idle people, we learn from this instance, that the martial spirit is not an invincible obstruction to industry. But the original barrenness of Switzerland, compelled the inhabitants to be sober and industrious ; and industry hath among them become a second nature ; there scarcely being a child above six years of age but who is employ'd,
not

not excepting children of opulent families. England differs widely in the nature of its soil, and of its people. But there is little occasion to insist upon that difference; as Switzerland affords no clear evidence, that a spirit of industry is perfectly compatible with a militia: the Swiss, it is true, may be termed industrious; but their industry is confined to necessities and conveniences: they are less ambitious of wealth than of military glory; and they have few arts or manufactures, either to support foreign commerce, or to excite luxury.

Fletcher of Salton's plan of a militia, differs little from that of Harrington. Three camps are to be constantly kept up in England, and a fourth in Scotland; into one or other of which, every man must enter upon completing his one and twentieth year. In these camps, the art of war is to be acquired and practised: those who can maintain themselves must continue there two years, others but a single year. Secondly, Those who have been thus educated, shall for ever after have fifty yearly meetings, and shall exercise four hours every meeting. It is not said,

said, by what means young men are compelled to resort to the camp ; nor is any exception mentioned of persons destin'd for the church, for liberal sciences, or for the fine arts. The weak and the sickly must be exempted ; and yet no regulation is proposed against those who absent themselves on a false pretext. But waving these, the capital objection against Harrington's plan strikes equally against Fletcher's, That by rousing a military spirit, it would alienate the minds of our people from arts and manufactures, and from constant and uniform occupation. The author himself remarks, that the use and exercise of arms, would make the youth place their honour upon that art, and would enflame them with love of military glory ; not advertising, that love of military glory, diffused through the whole mass of the people, would unqualify Britain for being a manufacturing and commercial country, rendering it of little weight or consideration in Europe.

The military branch is essential to every species of government: the Quakers are the only people who ever doubted of it. Is it not then mortifying, that a capital branch

branch of government, should to this day remain in a state so imperfect? One would suspect some inherent vice in the nature of government, that counteracts every effort of genius to produce a more perfect mode. I am not disposed to admit any such defect, especially in an article essential to the well-being of society; and rather than yield to the charge, I venture to propose the following plan, even at the hazard of being thought an idle projector. And what animates me greatly to make the attempt, is a firm conviction that a military and an industrious spirit are of equal importance to Britain; and that if either of them be lost, we are undone. To reconcile these seeming antagonists, is my chief view in the following plan; to which I shall proceed, after paving the way by some preliminary considerations.

The first is, that as military force is essential to every state, no man is exempted from bearing arms for his country: all are bound; because no person has right to be exempted more than another. Were any difference to be made, persons of figure and fortune ought first to be called to that service, as being the most interested in the

welfare of their country. Listen to a good soldier delivering his opinion on that subject. “ Les levées qui se font par super-
“ cherie sont tout aussi odieuses ; on met
“ de l’argent dans la pochette d’un hom-
“ me, et on lui dit qu’il est soldat. Celles
“ qui se font par force, le sont encore
“ plus ; c’est une défolation publique,
“ dont le bourgeois et l’habitant ne se sau-
“ vent qu’à force d’argent, et dont le fond
“ est toujours un moyen odieux. Ne vou-
“ droit-il pas mieux établir, par une loi,
“ que tout homme, de quelque condition
“ qu’il fût, seroit obligé de servir son
“ prince et sa patrie pendant cinq ans ?
“ Cette loi ne sçauroit être désapprouvée,
“ parce qu’il est naturel et juste que les
“ citoyens s’emploient pour la défense de
“ l’état. Cette methode de lever des trou-
“ pes seroit un fond inépuisable de belles
“ et bonnes recrues, qui ne seroient pas
“ sujetes a désertter. L’on se feroit même,
“ par la suite, un honneur et un devoir
“ de s’acquiescer à sa tâche. Mais, pour y par-
“ venir, il faudroit n’en excepter aucune
“ condition, être sévère sur ce point, et
“ s’attacher a faire exécuter cette loi de
“ préférence aux nobles et aux riches.

" Personne n'en murmurerait. Alors
 " ceux qui auroient servi leur temps, ver-
 " roient avec mépris ceux qui repugneroi-
 " ent à cette loi, et insensiblement on se
 " feroit un honneur de servir: le pauvre
 " bourgeois seroit consolé par l'exemple
 " du riche; et celui-ci n'oseroit se plain-
 " dre, voyant servir le noble (a) *."

Take

(a) Les reveries du Comte de Saxe.

* " The method of inlisting men, by putting a
 " trick upon them, is fully as odious. They slip a
 " piece of money into a man's pocket, and then tell
 " him he is a soldier. Inlisting by force is still more
 " odious. It is a public calamity, from which the
 " citizen has no means of saving himself but by
 " money; and it is consequently the worst of all
 " the resources of government. Would it not be
 " more expedient to enact a law, obliging every
 " man, whatever be his rank, to serve his King and
 " country for five years? This law could not be
 " disapproved of, because it is consistent both with
 " nature and justice, that every citizen should be
 " employed in the defence of the state. Here would
 " be an inexhaustible fund of good and able sol-
 " diers, who would not be apt to desert, as every
 " man would reckon it both his honour and his
 " duty to have served his time. But to effect this,
 " it must be a fixed principle, That there shall be
 " no exception of ranks. This point must be ri-
 " gorously attended to, and the law must be en-
 " forced, by way of preference, first among the
 " nobility

Take another preliminary consideration. While there were any remains among us of a martial spirit, the difficulty was not great of recruiting the army. But that task hath of late years become troublesome; and more disagreeable still than troublesome, by the necessity of using deceitful arts for trepanning the unwary youth. Nor are such arts always successful: in our late war with France, we were necessitated to give up even the appearance of voluntary service, and to recruit the army on the solid principle, that every man should fight for his country; the justices of peace being empowered to force into the service such as could be best spared from civil occupation. If a single clause had been added, limiting the service to five or seven years, the measure

“ nobility and the men of wealth. There would
 “ not be a single man who would complain of it. A
 “ person who had served his time, would treat with
 “ contempt another who should show reluctance to
 “ comply with the law; and thus, by degrees, it
 “ would become a task of honour. The poor citizen
 “ would be comforted and inspirited by the ex-
 “ ample of his rich neighbour; and he again would
 “ have nothing to complain of, when he saw that
 “ the nobleman was not exempted from service.”

would have been unexceptionable, even in a land of liberty. To relieve officers of the army from the necessity of practising deceitful arts, by substituting a fair and constitutional mode of recruiting the army, was a valuable improvement. It was of importance with respect to its direct intendment; but of much greater, with respect to its consequences. One of the few disadvantages of a free state, is licentiousness in the common people, who may wallow in disorder and profligacy without control, if they but refrain from gross crimes, punishable by law. Now, as it appears to me, there never was devised a plan more efficacious for restoring industry and sobriety, than that under consideration. Its salutary effects were conspicuous, even during the short time it subsisted. The dread of being forc'd into the service, rendered the populace peaceable and orderly: it did more; it rendered them industrious in order to conciliate favour. The most beneficial discoveries have been accidental: without having any view but for recruiting the army, our legislature stumbled upon an excellent plan for reclaiming the idle and the profligate; a
matter,

matter, in the present depravity of manners, of greater importance than any other that concerns the police of Britain. A perpetual law of that kind, by promoting industry, would prove a sovereign remedy against mobs and riots, diseases of a free state, full of people and of manufactures *. Why were the foregoing statutes, for there were two of them, limited to a temporary existence? There is not on record another statute better intitled to immortality.

And now to the project, which after all my efforts I produce with trepidation; not from any doubt of its solidity, but as ill suited to the present manners of this island. To hope that it will be put in practice, would indeed be highly ridiculous: this can never happen, till patriotism flourish more in Britain than it has

* Several late mobs in the south of England, all of them on pretext of scarcity, greatly alarmed the administration. A fact was discovered by a private person (*Six-weeks tour through the south of England*) which our ministers ought to have discovered, that these mobs constantly happened where wages were high and provisions low; consequently that they were occasioned, not by want, but by wantonness.

done for some time past. Supposing now an army of 60,000 men to be sufficient for Britain, a rational method for raising such an army, were there no standing forces, would be, that land-proprietors, in proportion to their valued rents, should furnish men to serve seven years, and no longer *. But as it would be no less unjust than imprudent, to disband at once our present army, we begin with moulding gradually the old army into the new, by filling up vacancies with men bound to serve seven years and no longer. And for raising proper men, a matter of much delicacy, it is proposed, that in every shire a special commission be given to certain landholders of rank and figure, to raise recruits out of the lower classes, selecting always those who are the least useful at home.

Second. Those who claim to be dismissed after serving the appointed time, shall never again be called to the service, ex-

* In Denmark, every land-proprietor of a certain rent, is obliged to furnish a militia-man, whom he can withdraw at pleasure upon substituting another; an excellent method for taming the peasants, and for rendering them industrious.

cept in case of an actual invasion. They shall be intitled each of them to a premium of eight or ten pounds, for enabling them to follow a trade or calling, without being subjected to corporation-laws. The private men in France are enlisted but for six years; and that mode has never been attended with any inconvenience*.

Third. With respect to the private men, idleness must be totally and for ever banished. Supposing three months yearly to be sufficient for military discipline; the men, during the rest of the year, ought to be employ'd upon public works, forming roads, erecting bridges, making rivers navigable, clearing harbours, &c. &c. Why not also furnish men for half-pay to private undertakers of useful works? And supposing the daily pay of a soldier to be

* Had the plan of discharging soldiers after a service of five or seven years been early adopted by the Emperors of Rome, the Pretorian bands would never have become masters of the state. It was a gross error to keep these troops always on foot without change of members; which gave them a confidence in one another, to unite in one solid body, and to be actuated as it were by one mind.

ten pence, it would greatly encourage extensive improvements, to have at command a number of stout fellows under strict discipline, at the low wages of five pence a-day. An army of 60,000 men thus employ'd, would not be so expensive to the public, as 20,000 men upon the present establishment: for beside the money contributed by private undertakers, public works carried on by soldiers would be miserably ill contrived, if not cheaply purchased with their pay *.

The most important branch of the project, is what regards the officers. The necessity of reviving in our people of rank some military spirit, will be acknowledged by every person of reflection; and in that view, the following articles are proposed. First, That there be two classes of officers, one serving for pay, one without pay. In filling up every vacant office of cornet or ensign, the latter are to be preferred; but in progressive advancement,

* Taking this for granted, I bring only into the computation the pay of the three months spent in military discipline; and the calculation is very simple, the pay of 20,000 for twelve months amounting to a greater sum than the pay of 60,000 for three months.

no distinction is to be made between the classes. An officer who has served seven years without pay, may retire with honour.

Second. No man shall be privileged to represent a county in parliament, who has not served seven years without pay; and, excepting an actual burgess, none but those who have performed that service, shall be privileged to represent a borough. The same qualification shall be necessary to every one who aspires to serve the public or the King in an office of dignity; excepting only churchmen and lawyers with regard to offices in their respective professions. In old Rome, none were admitted candidates for any civil employment, till they had served ten years in the army.

Third. Officers of this class are to be exempted from the taxes imposed on land, coaches, windows, and plate; not for saving a trifling sum, but as a mark of distinction.

The military spirit must in Britain be miserably low, if such regulations prove not effectual to decorate the army with officers of figure and fortune. Nor need we

to apprehend any bad consequence from a number of raw officers who serve without pay : among men of birth, emulation will have a more commanding influence than pay or profit ; and at any rate, there will always be a sufficiency of old and experienc'd officers receiving pay, ready to take the lead in every difficult enterprize.

To improve this army in military discipline, it is proposed, that when occasions offers, 5 or 6000 of them be maintained by Great Britain, as auxiliaries to some ally at war. And if that body be changed from time to time, knowledge and practice in war will be diffused thro' the whole army.

Officers who serve for pay, will be greatly benefited by this plan : frequent removes of those who serve without pay, make way for them ; and the very nature of the plan excludes buying and selling.

I proceed to the alterations necessary for accommodating this plan to our present military establishment. As a total revolution at one instant would breed confusion, the first step ought to be a specimen only, such as the levying two or three regiments
on

on the new model ; the expence of which ought not to be grudged, as the forces presently in pay, are not sufficient, even in peace, to answer the ordinary demands of government. And as the prospect of civil employments, will excite more men of rank to offer their service than can be taken in, the choice must be in the crown, not only with respect to the new regiments, but with respect to the vacant offices of cornet and ensign in the old army. But as these regulations will not instantly produce men qualified to be secretaries of state or commissioners of treasury, so numerous as to afford his Majesty a satisfactory choice ; that branch of the plan may be suspended, till those who have served seven years without pay, amount to one hundred at least. The article that concerns members of parliament must be still longer suspended : it may however, after the first seven years, receive execution in part, by privileging those who have served without pay to represent a borough, refusing that privilege to others, except to actual burgessees. We may proceed one step farther, That if in a county there be five gentlemen who have the qualification

under consideration, over and above the ordinary legal qualifications; one of the five must be chosen, leaving the electors free as to their other representative.

With respect to the private men of the old army, a thousand of such as have served the longest may be disbanded annually, if so many be willing to retire; and in their stead an equal number may be enlisted to serve but seven years. Upon such a plan, it will not be difficult to find recruits.

The advantage of this plan, in one particular, is eminent. It will infallibly fill the army with gallant officers: Other advantages concerning the officers themselves, shall be mentioned afterward. An appetite for military glory, cannot fail to be roused in officers who serve without pay, when their service is the only passport to employments of trust and honour. And may we not hope, that officers who serve for pay, will, by force of imitation, be inspired with the same appetite? Nothing ought to be more sedulously inculcated into every officer, than to despise riches, as a mercantile object below the dignity of a soldier. Often has the courage of victorious

rious troops been blunted by the pillage of an opulent city ; and may not rich captures at sea have the same effect ? Some sea-commanders have been suspected, of bestowing their fire more willingly upon a merchantman, than upon a ship of war. A triumph, an ovation, a civic crown, or some such mark of honour, were in old Rome the only rewards for military achievements *. Money, it is true, was sometimes distributed among the private men, as an addition to their pay, after a fatiguing campaign ; but not as a recompence for their good behaviour, because all shared alike. It did not escape the penetrating Romans, that wealth, the parent of luxury and selfishness, fails not to era-

* A Roman triumph was finely contrived to excite heroism ; and a sort of triumph no less splendid, was usual among the Fatemite Califs of Egypt. After returning from a successful expedition, the Calif pitched his camp in a spacious plain near his capital, where he was attended by all his grandees, in their finest equipages. Three days were commonly spent in all manner of rejoicings, feasting, music, fireworks, &c. He marched into the city with this great cavalcade, through roads covered with rich carpets, strewed with flowers, gums, and odoriferous plants, and lined on both sides with crowds of congratulating subjects.

dicato

dicate the military spirit. The foldier who to recover his baggage performed a bold action, gave an instructive lesson to all princes. Being invited by his general to try his fortune a second time ; “ Invite “ (says the foldier) one who has lost his “ baggage.” Many a bold adventurer goes to the Indies, who, returning with a fortune, is afraid of every breeze. Britain, I suspect, is too much infected with the spirit of gain. Will it be thought ridiculous in any man of figure, to prefer reputation and respect before riches ; provided only he can afford a frugal meal, and a warm garment ? Let us compare an old officer, who never deserted his friend nor his country, and a wealthy merchant, who never indulged a thought but of gain : the wealth is tempting ; — and yet does there exist a man of spirit, who would not be the officer rather than the merchant, even with his millions ? Sultan Mechmet granted to the Janisaries a privilege of importing foreign commodities free of duty : was it his intention to metamorphose soldiers into merchants, loving peace, and hating war ?

In the war 1672 carried on by Lewis
XIV.

XIV. against the Dutch, Dupas was made governor of Naerden, recommended by the Duke of Luxembourg ; who wrote to M. de Louvois, that he wished nothing more ardently, than that the Prince of Orange would besiege Naerden, being certain of a defence so skilful and vigorous, as to furnish an opportunity for another victory over the Prince. Dupas had served long in honourable poverty ; but in this rich town he made a shift to amass a considerable sum. Terrified to be reduced to his former poverty, he surrendered the town on the first summons. He was degraded in a court-martial, and condemned to perpetual prison and poverty. Having obtained his liberty at the solicitation of the Viscount de Turenne, he recovered his former valour, and ventured his life freely on all occasions.

. But tho' I declare against large appointments beforehand, which, instead of promoting service, excite luxury and effeminacy ; yet to an officer of character, who has spent his younger years in serving his king and country, a government or other suitable employment that enables him to pass the remainder of his life in ease and
affluence,

affluence, is a proper reward for merit, reflecting equal honour on the prince who bestows, and on the subject who receives; beside affording an enlivening prospect to others, who have it at heart to do well.

With respect to the private men, the rotation proposed, aims at improvements far more important than that of making military service fall light upon individuals. It tends to unite the spirit of industry with that of war; and to form the same man to be an industrious labourer, and a good soldier. The continual exercise recommended, cannot fail to produce a spirit of industry; which will occasion a demand for the private men after their seven years service, as valuable above all other labourers, not only for regularity, but for activity. And with respect to service in war, constant exercise is the life of an army, in the literal as well as metaphorical sense. Boldness is inspired by strength and agility, to which constant motion mainly contributes. The Roman citizens, trained to arms from their infancy and never allowed to rest, were invincible. To mention no other works, spacious and durable roads carried to the very extremities of that
I
vast

vaſt empire, ſhow clearly how the ſoldiers were employ'd during peace ; which hardened them for war, and made them orderly and ſubmiſſive (*a*). So eſſential was labour held by the Romans for training an army, that they never ventured to face an enemy with troops debilitated with idleneſs. The Roman army in Spain, having been worſted in ſeveral engagements and confined within their entrenchments, were funk in idleneſs and luxury. Scipio Nafica, having demolifhed Carthage, took the command of that army ; but durſt not oppoſe it to the enemy, till he had accuſtomed the ſoldiers to temperance and hard labour. He exerciſed them without relaxation, in marching and countermarching, in fortifying camps and demolifhing them, in digging trenches and filling them up, in building high walls and pulling them down ; he himſelf, from morning till evening, going about, and directing every operation. Marius, before engaging the Cimbri, exerciſed his army in turning the courſe of a river. Appian relates, that Antiochus, during his winter-quarters at

(*a*) Bergiere hiſtoire des grands chemins, vol. 2. p. 152.

Calchis, having married a beautiful virgin with whom he was greatly enamoured, spent the whole winter in pleasure, abandoning his army to vice and idleness; and that when the time of action returned with the spring, he found his soldiers unfit for service. It is reported of Hannibal, that to preserve his troops from the infection of idleness, he employ'd them in making large plantations of olive trees. The Emperor Probus exercised his legions in covering with vineyards the hills of Gaul and Pannonia. The idleness of our soldiers in time of peace, promoting debauchery and licentiousness, is no less destructive to health than to discipline. Unable for the fatigues of a first campaign, our private men die in thousands, as if smitten with a pestilence *. We never
read

* The idleness of British soldiers appears from a transaction of the commissioners of the annexed estates in Scotland. After the late war with France, they judged, that part of the King's rents could not be better applied, than in giving bread to the disbanded soldiers. Houses were built for them, portions of land given them to cultivate at a very low rent, and maintenance afforded them till they could reap a crop. These men could not wish to be better accommodated :

read of any mortality in the Roman legions, tho' frequently engaged in climates very different from their own. Let us listen to a judicious writer, to whom every one listens with delight: " Nous remarquons aujourd'hui, que nos armées périssent beaucoup par le travail immodéré des soldats ; et cependant c'étoit par un travail immense que les Romains se conservoient. La raison en est, je crois, que leurs fatigues étoient continues ; au lieu que nos soldats passent sans cesse d'un travail extrême à une extrême oisiveté, ce qui est la chose du monde la plus propre à les faire périr. Il faut que je rapporte ici ce que les auteurs nous disent de l'éducation de soldats Romains. On les accoutumoit à aller le pas militaire, c'est-à-dire, à faire en cinq heures vingt milles, et quelquefois vingt-quatre. Pendant ces marches, on leur faisoit porter de poids de

accommodated : but so accustomed they had been to idleness and change of place, as to be incapable of any sort of work : they deserted their farms one after another, and commenced thieves and beggars. Such as had been made serjeants must be excepted : these were sensible fellows, and prospered in their little farms.

“ soixante livres. On les entretenoit dans
 “ l’habitude de courir et de sauter tout
 “ armés ; ils prenoient dans leurs exerci-
 “ ces des épées, de javelots, de flèches,
 “ d’une pefanteur double des armes ordi-
 “ naires ; et ces exercices étoient conti-
 “ nuels. Des hommes si endurcis étoient
 “ ordinairement sains ; on ne remarque
 “ pas dans les auteurs que les armées Ro-
 “ maines, qui faisoient la guerre en tant
 “ de climats, perissoient beaucoup par les
 “ maladies ; au lieu qu’il arrive presque
 “ continuellement aujourd’hui, que des
 “ armées, sans avoir combattu, se fon-
 “ dent, pour ainsi dire, dans une cam-
 “ pagne * (a).” Our author must be here
 understood

(a) Montesquieu, Grandeur de Romains, chap. 2.

* “ We observe now-a-days, that our armies
 “ are consumed by the fatigues and severe labour of
 “ the soldiers ; and yet it was alone by labour and
 “ toil that the Romans preserved themselves from
 “ destruction. I believe the reason is, that their
 “ fatigue was continual and unremitting, while the
 “ life of our soldiers is a perpetual transition from
 “ severe labour to extreme indolence, a life the
 “ most ruinous of all others. I must here recite the
 “ account which the Roman authors give of the e-
 “ ducation of their soldiers. They were continu-
 “ ally habituated to the military pace, which was,
 “ to

understood of the early times of the Roman state. Military discipline was much sunk in the fourth century when Vegetius wrote (Lib. 3. cap. 14. 15.). The sword and Pilum, these formidable weapons of their forefathers, were totally laid aside for slings and bows, the weapons of effeminate people. About this time it was, that the Romans left off fortifying their camps, a work too laborious for their weakly constitutions. Mareschal Saxe, a soldier, not a physician, ascribes to the use of vinegar the healthiness of the Roman legions : were vinegar so salutary, it would of all liquors be the most in request. Exercise without intermission, during

“ to march in five hours twenty, and sometimes
“ twenty-four miles. In these marches each soldier
“ carried sixty pounds weight. They were accu-
“ stomed to run and leap in arms ; and in their mi-
“ litary exercises, their swords, javelins, and ar-
“ rows, were of twice the ordinary weight. These
“ exercises were continual, which so strengthened
“ the constitution of the men, that they were al-
“ ways in health. We see no remarks in the Ro-
“ man authors, that their armies, in the variety of
“ climates where they made war, ever perished by
“ disease ; whilst now-a-days it is not unusual, that
“ an army, without ever coming to an engagement,
“ dwindles away by disease in one campaign.”

peace

peace as well as during war, produced that salutary effect ; which every prince will find, who is disposed to copy the Roman discipline *. The Marechal guesses better with respect to a horse. Discouraging of cavalry, he observes, that a horse becomes hardy and healthful by constant exercise, and that a young horse is unable to bear fatigue ; for which reason he declares against young horses for the service of an army.

That the military branch of the British government is susceptible of improvements, all the world will admit. To improve it, I have contributed my mite ;

* *Rei militaris periti, plus quotidiana armorum exercitia ad sanitatem militum putaverunt prodesse, quam medicos. Ex quo intelligitur quanto studiosius armorum artem docendus sit semper exercitus, cum ei laboris consuetudo et in castris sanitatem, et in conflictu possit præstare victoriam. Vegetius, De re militari, lib. 3. cap. 2.—[In English thus : “ Our
“ masters of the art-military were of opinion,
“ that daily exercise in arms contributed more to
“ the health of the troops, than the skill of the
“ physician : from which we may judge, what care
“ should be taken, to habituate the foldiers to the
“ exercise of arms, to which they owe both their
“ health in the camp, and their victory in the
“ field.”]*

which

which is humbly submitted to the public, a judge from which there lies no appeal. It is submitted in three views. The first is, Whether an army, modelled as above, would not secure us against the boldest invader; the next, Whether such an army be as dangerous to liberty, as an army in its present form; and the last, Whether it would not be a school of industry and moderation to our people.

With respect to the first, we should, after a few years, have not only an army of sixty thousand well-disciplined troops, but the command of another army, equally numerous and equally well disciplined. It is true, that troops inured to war have an advantage over troops that have not the same experience: but with assurance it may be pronounced impracticable, to land at once in Britain an army that can stand against 100,000 British soldiers well disciplined, fighting, even the first time, for their country, and for their wives and children.

A war with France raises a panic on every flight threatening of an invasion. The security afforded by the proposed plan, would enable us to act offensively
at

at sea, instead of being reduced to keep our ships at home for guarding our coasts. Would Britain any longer be obliged to support her continental connections? No sooner does an European prince augment his army or improve military discipline, than his neighbours, taking fright, must do the same. May not one hope, that by the plan proposed, or by some such, Britain would be relieved from jealousy and solicitude about its neighbours?

With respect to the second view, having long enjoy'd the sweets of a free government under a succession of mild princes, we begin to forget that our liberties ever were in danger. But drousy security is of all conditions the most dangerous; because the state may be overwhelmed before we even dream of danger. Suppose only, that a British King, accomplished in the art of war and beloved by his soldiers, heads his own troops in a war with France; and after more than one successful campaign, gives peace to his enemy, on terms advantageous to his people: what security have we for our liberties, when he returns with a victorious army,
2 devoted

devoted to his will? I am talking of a standing army in its present form. Troops modelled as above would not be so obsequious: a number of the prime nobility and gentry serving without pay, who could be under no temptation to enslave themselves and their country, would prove a firm barrier against the ambitious views of such a prince. And even supposing that army to be totally corrupted, the prince could have little hope of success against the nation, supported by a veteran army, that might be relied on as champions for their country.

And as to the last view mentioned, the plan proposed would promote industry and virtue, not only among the soldiers, but among the working people in general. To avoid hard labour and severe discipline in the army, men would be sober and industrious at home; and such untractable spirits as cannot be reached by the mild laws of a free government, would be effectually tamed by military law. At the same time, as sobriety and innocence are constant attendants upon industry, the manners of our people would be much purified; a circumstance of infinite importance to Bri-

tain. The salutary influence of the plan, would reach persons in a higher sphere. A young gentleman, whipt at school, or falling behind at college, contracts an aversion to study ; and flies to the army, where he is kept in countenance by numbers, idle and ignorant like himself. How many young men are thus daily ruined, who, but for the temptation of idleness and gaiety in the army, would have become useful subjects ! In the plan under consideration, the officers who serve for pay would be so few in number, and their prospect of advancement so clear, that it would require much interest to be admitted into the army. None would be admitted but those who have been regularly educated in every branch of military knowledge ; and idle boys would be remitted to their studies.

Here is display'd an agreeable scene with relation to industry. Supposing the whole threescore thousand men to be absolutely idle ; yet, by doubling the industry of those who remain, I affirm, that the sum of industry would be much greater than before. And the scene becomes enchanting, when we consider, that these
threescore

threescore thousand men, would not only be of all the most industrious, but be patterns of industry to others.

Upon conclusion of a foreign war, we suffer grievously by disbanded soldiers, who must plunder or starve. The present plan is an effectual remedy: men accustomed to hard labour under strict discipline, can never be in want of bread: they will be sought for every where, even at higher than ordinary wages; and they will prove excellent masters for training the peasants to hard labour.

A man indulges emulation more freely in behalf of his friend or his country, than of himself: emulation in the latter case is selfish; in the former, is social. Doth not that give us reason to hope, that the separating military officers into different classes will excite a laudable emulation, prompting individuals to exert themselves on every occasion for the honour of their class? Nor will such emulation, a virtuous passion, be any obstruction to private friendship between members of different classes. May it not be expected, that young officers of birth and fortune, zealous to qualify themselves at their own

expence for serving their country, will cling for instruction to officers of experience, who have no inheritance but personal merit? Both find their account in that connection: men of rank become adepts in military affairs, a valuable branch of education for them; and officers who serve for pay, acquire friends at court, who will embrace every opportunity of testifying their gratitude.

The advantages mentioned are great and extensive; and yet are not the only advantages. Will it be thought extravagant to hope, that the proposed plan would form a better system of education for young men of fortune, than hitherto has been known in Britain? Before pronouncing sentence against me, let the following considerations be weigh'd. Our youth go abroad to *see* the world in the literal sense; for to pierce deeper than eyesight, cannot be expected of boys. They resort to gay courts, where nothing is found for imitation but pomp, luxury, disguised virtues, and real vices: such scenes make an impression too deep on young men of a warm imagination. Our plan would be an antidote to such poisonous education. Supposing eighteen to be
the

the earliest time for the army ; here is an object held up to our youth of fortune, for rousing their ambition : they will endeavour to make a figure, and emulation will animate them to excel : supposing a young man to have no ambition, shame however will push him on. To acquire the military art, to discipline their men, to direct the execution of public works, and to conduct other military operations, would occupy their whole time, and banish idleness. A young gentleman, thus guarded against the enticing vices and fauntering follies of youth, must be sadly deficient in genius, if, during his seven years service, reading and meditation have been totally neglected. Hoping better things from our youth of fortune, I take for granted, that during their service they have made some progress, not only in military knowledge, but in morals, and in the fine arts, so as at the age of twenty-five to be qualified for profiting, instead of being undone, by *seeing* the world *.

Further,

* Whether hereditary nobility may not be necessary in a monarchical government to support the King against the multitude, I take not on me to pronounce :

Further, young men of birth and fortune, acquire indeed the smoothness and suppleness of a court, with respect to their superiors ; but the restraint of such manners, makes their temper break out against inferiors, where there is no restraint. Insolence of rank, is not so visible in Britain as in countries of less freedom ; but it is sufficiently visible to require correction. To that end, no method promises more success than military service ; as command and obedience alternately, are the best discipline for acquiring temper and moderation. Can pride and insolence be more effectually stemmed, than to be under command of an inferior ?

Still upon the important article of education. Where pleasure is the ruling passion in youth, interest will be the ruling passion in age : the selfish principle is the foundation of both ; the object only is

pronounce : but this I pronounce with assurance, that such a constitution is unhappy with respect to education ; and appears to admit no remedy, if it be not that above mentioned, or some such. In fact, few of those who received their education while they were the eldest sons of Peers, have been duly qualified to manage public affairs.

varied.

varied. This observation is sadly verified in Britain: our young men of rank, loathing an irksome and fatiguing course of education, abandon themselves to pleasure. Trace these very men through the more settled part of life, and they will be found grasping at power and profit, by means of court-favour; with no regard to their country, and with very little to their friends. The education proposed, holding up a tempting prize to virtuous ambition, is an excellent fence against a life of indolent pleasure. A youth of fortune, engaged with many rivals in a train of public service, acquires a habit of business; and as he is constantly employ'd for the public, patriotism becomes his ruling passion *.

The

* The following portrait is sketched by a good hand, (Madame Pompadour); and if it have any resemblance, it sets our plan in a conspicuous light. The French noblesse, says that lady, spending their lives in dissipation and idleness, know as little of politics as of economy. A gentleman hunts all his life in the country, or perhaps comes to Paris to ruin himself with an opera-girl. Those who are ambitious to be of the ministry, have seldom any merit, if it be not in caballing and intrigue. The French noblesse have courage, but without any genius

The advantages of a military education, such as that proposed, are not yet exhausted. Under regular government promoting the arts of peace, social intercourse refines, and fondness for company increases in proportion. And hence it is, that the capital is crowded with every person who can afford to live there. A man of fortune, who has no taste but for a city life, happens to be forc'd into the country by business: finding business and the country equally insipid, he turns impatient, and flies to town, with a disgust at every rural amusement. In France, the country has been long deserted: in Britain the same fondness for a town-life is gaining ground. A stranger considering the immense sums expended in England upon country-seats, would conclude, in appearance with great certainty, that the English spend most of their time in the country. But how would it surprise him

nus for war, the fatigue of a soldier's life being to them unsupportable. The King has been reduced to the necessity of employing two strangers for the safety of his crown: had it not been for the Counts Saxe and Louendahl, the enemies of France might have laid siege to Paris.

to be told, not only that people of fashion in England pass little of their time there, but that the immense sums laid out upon gardening and pleasure-grounds, are the effect of vanity more than of taste! In fact, such embellishments are beginning to wear out of fashion; appetite for society leaving neither time nor inclination for rural pleasures. If the progress of that disease can be stay'd, the only means is military education. In youth lasting impressions are made; and men of fortune who take to the army, being confined mostly to the country in prime of life, contract a liking for country occupations and amusements: which withdraw them from the capital, and contribute to the health of the mind, no less than of the body.

A military life is the only cure for a disease much more dangerous. Most men of rank are ambitious of shining in public. They may assume the patriot at the beginning; but it is a false appearance, for their patriotism is only a disguise to favour their ambition. A court life becomes habitual and engrosses their whole soul: the minister's nod is a law to them: they dare not disobey; for to be reduced to a

private station, would to them be a cruel misfortune. This impotence of mind is in France so excessive, that to banish a courtier to his country seat, is held an adequate punishment for the highest misdemeanor. This sort of slavery is gaining ground in Britain; and it ought to be dreaded, for scarce another circumstance will more readily pave the way to absolute power, if adverse fate shall afflict us with an ambitious King. There is no effectual remedy to the servility of a court life, but the military education here recommended.

A military education would contribute equally to moderation in social enjoyments. The pomp, ceremony, and expence, necessary to those who adhere to a court and live always in public, are not a little fatiguing and oppressive. Man is naturally moderate in his desire of enjoyment; and it requires much practice to make him bear excess without satiety and disgust. The pain of excess, prompts men of opulence to pass some part of their time in a snug retirement, where they live at ease, free from pomp and ceremony. Here is a retirement, which can be reached without any painful circuit; a port of
safety

safety and of peace, to which we are piloted by military education, avoiding every dangerous rock, and every fatiguing agitation.

Reflecting on the advantages of military education above display'd, is it foolish to think, that our plan might produce a total alteration of manners in our youth of birth and fortune? The idler, the gamester, the profligate, compared with our military men, would make a despicable figure: shame, not to talk of pride, would compel them to reform.

How conducive to good government might the proposed plan be, in the hands of a virtuous king, supported by a public-spirited ministry! In the present course of advancement, a youth of quality who aspires to serve his country in a civil employment, has nothing to rely on but parliamentary interest. The military education proposed, would afford him opportunity to improve his talents, and to convince the world of his merit. Honour and applause thus acquired, would intitle him to demand preferment; and he ought to be employ'd, not only as deserving, but as an encouragement to others. Frequent

instances of neglecting men who are patronized by the public, might perhaps prove dangerous to a British minister.

If I have not all this while been dreaming, here are display'd illustrious advantages of the military education proposed. Fondness for the subject excites me to prolong the entertainment; and I add the following reflection on the education of such men as are disposed to serve in a public station. The sciences are mutually connected: a man cannot be perfect in any one, without being in some degree acquainted with every one. The science of politics in particular, being not a little intricate, cannot be acquired in perfection by any one whose studies have been confined to a single branch, whether relative to peace or to war. The Duke of Marlborough made an eminent figure in the cabinet, as well as in the field; and so did equally the illustrious Sully, who may serve as a model to all ministers. The great aim in modern politics is, to split government into the greatest number possible of departments, trusting nothing to genius. China affords such a government in perfection. National affairs are there so simplified by division,

vision, as to require scarce any capacity in the mandarines. These officers, having little occasion for activity either of mind or of body, sink down into sloth and sensuality: motives of ambition or of fame make no impression: they have not even the delicacy to blush when they err: and as no punishment is regarded but what touches the person or the purse, it is not unusual to see a mandarine beaten with many stripes, sometimes for a very slight transgression. Let arts be subdivided into many parts: the more subdivisions the better. But I venture to pronounce, that no man ever did, nor ever will, make a capital figure in the government of a state, whether as a judge, a general, or a minister, whose education is rigidly confined to one science*.

Sensible I am that the foregoing plan is in several respects imperfect; but if it be sound at bottom, polish and improvement are easy operations. My capital aim has

* Phocion is praised by ancient writers, for struggling against an abuse that had crept into his country of Attica, that of making war and politics different professions. In imitation of Aristides and of Pericles, he studied both equally.

been,

been, to obviate the objections that press hard against every military plan, hitherto embraced or proposed. A standing army in its present form, is dangerous to liberty; and but a feeble bulwark against superior force. On the other hand, a nation in which every subject is a soldier, must not indulge any hopes of becoming powerful by manufactures and commerce: it is indeed vigorously defended, but is scarce worthy of being defended. The golden mean of rotation and constant labour in a standing army, would discipline multitudes for peace as well as for war. And a nation so defended would be invincible.

SKETCH

S K E T C H X.

Public Police with respect to the Poor.

AMong the industrious nations of Europe, regulations for the poor, make a considerable branch of public police. These regulations are so multiplied and so anxiously framed, as to move one to think, that there cannot remain a single person under a necessity to beg. It is however a sad truth, that the disease of poverty, instead of being eradicated, has become more and more inveterate. England in particular overflows with beggars, tho' in no other country are the indigent so amply provided for. Some radical defect there must be in these regulations, when, after endless attempts to perfect them, they prove abortive. Every writer, dissatisfied with former plans, fails not to produce one of his own ; which, in its turn, meets with as little approbation as any of the foregoing.

The first regulation of the states of Holland

land concerning the poor, was in the year 1614, prohibiting all begging. The next was in the year 1649. "It is enacted, "That every town, village, or parish, "shall maintain its poor out of the income of its charitable foundations and collections. And in case these means fall short, the magistrates shall maintain them at the general expence of the inhabitants, as can most conveniently be done: Provided always, that the poor be obliged to work either to merchants, farmers, or others, for reasonable wages, in order that they may, as far as possible, be supported that way; provided also, that they be indulged in no idleness nor insolence." The advice or instruction here given to magistrates, is sensible; but falls short of what may be termed a *law*, the execution of which can be enforced in a court of justice.

In France, the precarious charity of monasteries proving ineffectual, a hospital was erected in the city of Paris *anno* 1656, having different apartments; one for the innocent poor, one for putting vagabonds to hard labour, one for foundlings, and one for the sick and maimed; with cer-

tain funds for defraying the expence of each, which produce annually much about the same sum. In imitation of Paris, hospitals of the same kind were erected in every great town of the kingdom.

The English began more early to think of their poor; and in a country without industry, the necessity probably arose more early. The first English statute bears date in the year 1496, directing, "That every beggar unable to work, shall resort to the hundred where he last dwelt or was born; and there shall remain, upon pain of being set in the stocks three days and three nights, with only bread and water, and then shall be put out of town." This was a law against vagrants, for the sake of order. There was little occasion, at that period, to provide for the innocent poor; their maintenance being a burden upon monasteries. But monasteries being put down by Henry VIII. a statute, 22d year of his reign, cap. 12. impowered the justices of every county, to license poor aged and impotent persons to beg within a certain district; those who beg without it, to be whipt, or set in the stocks. In the

first year of Edward VI. cap. 3. a statute was made in favour of impotent, maimed, and aged persons, that they shall have convenient houses provided for them, in the cities or towns where they were born, or where they resided for three years, to be relieved by the *willing and charitable disposition* of the parishioners. By 2d and 3d Philip and Mary, cap. 5. the former statutes of Henry VIII. and Edward VI. were confirmed, of gathering weekly relief for the poor by charitable collections. "A man licensed to beg, shall wear a badge on his breast and back openly."

The first compulsory statute was 5^o Elizab. cap. 3. empowering justices of peace to raise a weekly sum for the poor, by taxing such persons as obstinately refuse to contribute, after repeated admonitions from the pulpit. In the next statute, 14^o Elizab. cap. 5. a bolder step was made, empowering justices to tax the inhabitants of every parish, in a weekly sum for their poor. And taxations for the poor being now in some degree familiar, the remarkable statutes, 39^o Elizab. cap. 3. and 43^o Elizab. cap. 2. were enacted, which are the ground-work of all the subsequent statutes

statutes concerning the poor. By these statutes, certain householders, named by the justices, are, in conjunction with the church-wardens, appointed overseers for the poor; and these overseers, with consent of two justices, are empowered to tax the parish in what sums they think proper, for maintaining the poor.

Among a people so tenacious of liberty as the English are, and so impatient of oppression, is it not surprising, to find a law, that without ceremony subjects individuals to be taxed at the arbitrary will of men, who seldom either by birth or education deserve that important trust; and without even providing any effectual check against embezzlement? At present, a British parliament would reject with scorn such an absurd plan; and yet, being familiarized to it, they never seriously have attempted a repeal. We have been always on the watch to prevent the sovereign's encroachments, especially with regard to taxes: but as parish-officers are low persons who inspire no dread, we submit to have our pockets pick'd by them, almost without repining. There is provided, it is true, an appeal to the general sessions

for redressing inequalities in taxing the parishioners. But it is no effectual remedy: artful overseers will not over-rate any man so grossly as to make it his interest to complain, considering that these overseers have the poor's money to defend themselves with. Nor will the general sessions readily listen to a complaint, that cannot be verified but with much time and trouble. If the appeal have any effect, it makes a still greater inequality, by relieving men of figure at the expence of their inferiors; who must submit, having little interest to obtain redress.

The English plan, beside being oppressive, is grossly unjust. If it should be reported of some distant nation, that the burden of maintaining the idle and profligate, is laid upon the frugal and industrious, who work hard for a maintenance to themselves; what would one think of such a nation? Yet this is literally the case of England. I say more: the plan is not only oppressive and unjust, but miserably defective in the checking of maladministration. In fact, great sums are levied beyond what the poor receive: it requires briguing to be named a church-warden: the

the nomination, in London especially, gives him credit at once; and however meagre at the commencement of his office, he is round and plump before it ends. To wax fat and rich by robbing the poor! Let us turn our eyes from a scene so horrid *.

Inequality in taxing, and embezzlement of the money levied, which are notorious, poison the minds of the people; and impress them with a notion, that all taxes raised by public authority are ill managed.

These evils are great, and yet are but slight compared with what follow. . As the

* In the parish of St George, Hanover Square, a great reform was made some years ago. Inhabitants of figure, not excepting men of the highest rank, take it in turn to be church-wardens; which has reduced the poor-rates in that parish to a trifle. But people, after acquiring a name, soon tire of drudging for others. The drudgery will be left to low people as formerly, and the tax will again rise as high in that parish as in others. The poor-rates, in Dr Davenant's time, were about L. 700,000 yearly. In the year 1764, they amounted to L. 2,200,000. In the year 1773, they amounted to L. 3,000,000, equal to six shillings in the pound land-tax.

number

number of poor in England, as well as the expence of maintenance, are increasing daily ; proprietors of land, in order to be relieved of a burden so grievous, drive the poor out of the parish, and prevent all persons from settling in it who are likely to become a burden : cottages are demolished, and marriage obstructed. Influenced by the present evil, they look not forward to depopulation, nor to the downfall of husbandry and manufactures by scarcity of hands. Every parish is in a state of war with every other parish, concerning *pauper* settlements and removals.

The price of labour is generally the same in the different shires of Scotland, and in the different parishes. A few exceptions are occasioned by the neighbourhood of a great town, or by some extensive manufacture that requires many hands. In Scotland, the price of labour resembles water, which always levels itself : if high in any one corner, an influx of hands brings it down. The price of labour varies in every parish of England : a labourer who has gain'd a settlement in a parish, on which he depends for bread when he inclines to be idle, dares not remove to
another

another parish where wages are higher, fearing to be cut out of a settlement altogether. England is in the same condition with respect to labour, that France lately was with respect to corn ; which, however plentiful in one province, could not be exported to supply the wants of another. The pernicious effect of the latter with respect to food, are not more obvious, than of the former with respect to manufactures.

English manufactures labour under a still greater hardship than inequality of wages. In a country where there is no fund for the poor but what nature provides, the labourer must be satisfied with such wages as are customary : he has no resource ; for pity is not moved by idleness. In England, the labourers command the market : if not satisfied with customary wages, they have a tempting resource ; which is, to abandon work altogether, and to put themselves on the parish. Labour is much cheaper in France than in England : several plausible reasons have been assigned ; but in my judgement, the difference arises from the poor-laws. In England, every man is entitled to be idle ;
because

because every idler is entitled to a maintenance. In France, the funds allotted for the poor, yield the same sum annually: that sum is always preoccupied; and France, with respect to all but those on the list, is a nation that has no fund provided by law for the poor.

Depopulation, inequality in the price of labour, and extravagant wages, are deplorable evils. But the English poor-laws are productive of evils still more deplorable: they are subversive both of morality and industry. This is a heavy charge, but no less true than heavy. Fear of want is the only effectual motive to industry with the labouring poor: remove that fear, and they cease to be industrious. The ruling passion of those who live by bodily labour, is to save a pittance for their children, and for supporting themselves in old age: stimulated by desire of accomplishing these ends, they are frugal and industrious; and the prospect of success is to them a continual feast. Now, what worse can malice invent against such a man, under colour of friendship, than to secure bread to him and his children whenever he takes a dislike to work; which
I effectually

effectually deadens his sole ambition, and with it his honest industry? Relying on the certainty of a provision against want, he relaxes gradually till he sinks into idleness: idleness leads to profligacy: profligacy begets diseases: and the wretch becomes an object of public charity before he has run half his course. Such are the genuine effects of the English tax for the poor, under a mistaken notion of charity. There never was known in any country, a scheme for the poor more contradictory to sound policy. Might it not have been foreseen, that to a groveling creature, who has no sense of honour and scarce any of shame, the certainty of maintenance would prove an irresistible temptation to idleness and debauchery? The poor-house at Lyons contained originally but forty beds, of which twenty only were occupied. The eight hundred beds it contains at present, are not sufficient for those who demand admittance. A premium is not more successful in any case, than where given to promote idleness *. A house for the poor

was

* A London alderman named *Harper*, who was cotemporary with James I. or his son Charles, be-

was erected in a French village, the revenue of which by economy became confi-

queathed ten or twelve acres of meadow ground in the parish of St Andrew's Holborn, London, for the benefit of the poor in the town of Bedford. This ground has been long covered with houses, which yield from L. 4000 to L. 5000 yearly. That sum is laid out upon charity-schools, upon defraying the expence of apprenticeships, and upon a stock to young persons when they marry; an encouragement that attracts to the town of Bedford great numbers of the lower classes. So far well; but mark the consequence. That encouragement relaxes the industry of many, and adds greatly to the number of the poor. Hence it is, that in few places of England does the poor's rate amount so high as in the town of Bedford. An extensive common in the parish of Charley, Suffex, is the chief cause of an extravagant assessment for the poor, no less than nine shillings in the pound of rack rent. Give a poor man access to a common for feeding two or three cows, you make him idle by a dependence upon what he does not labour for. The town of Largo in Fife has a small hospital, erected many years ago by a gentleman of the name of Wood; and confined by him to the poor of his own name. That name being rare in the neighbourhood, access to the hospital is easy. One man in particular is entertained there, whose father, grandfather, and great-grandfather, enjoy'd successively the same benefit; every one of whom probably would have been useful members of society, but for that temptation to idleness.

derable.

derable. Upon a representation by the curate of the parish that more beds were necessary, the proprietor undertook the management. He sold the house, with the furniture ; and to every proper object of charity, he ordered a moderate proportion of bread and beef. The poor and sick were more comfortably lodged at home, than formerly in the poor-house. And by that management, the parish-poor decreased, instead of increasing as at Lyons. How few English manufacturers labour the whole week, if the work of four or five days afford them maintenance ? Is not this a demonstration, that the malady of idleness is widely spread ? In Bristol, the parish-poor twenty years ago did not exceed four thousand : at present, they amount to more than ten thousand. But as a malady, when left to itself, commonly effectuates its own cure ; so it will be in this case : when, by prevailing idleness, every one without shame claims parish-charity, the burden will become intolerable, and the poor will be left to their shifts.

The immoral effects of public charity are not confined to those who depend on

it, but extend to their children. The constant anxiety of a labouring man to provide for his issue, endears them to him. Being relieved of that anxiety by the tax for the poor, his affection cools gradually, and he turns at last indifferent about them. Their independence, on the other hand, weans them from their duty to him. And thus, affection between parent and child, which is the corner-stone of society, is in a great measure obliterated among the labouring poor. In a plan published by the Earl of Hillsborough, an article is proposed to oblige parents to maintain their indigent children, and children to maintain their indigent parents. Natural affection must be at a low ebb, where such a regulation is necessary : but it is necessary, at least in London, where it is common to see men in good business neglecting their aged and diseased parents, for no better reason than that the parish is bound to find them bread : *Proh tempora, proh mores !*

The immoral effects of public charity spread still wider. It fails not to extinguish the virtue of charity among the rich ; who never think of giving charity,
when

when the public undertakes for all. In a scheme published by Mr Hay, one article is, to raise a stock for the poor by voluntary contributions, and to make up the deficiency by a parish-tax. Will individuals ever contribute, when it is not to relieve the poor, but to relieve the parish? Every hospital has a poor-box, which seldom produces any thing *. The great comfort of society is assistance in time of need; and its firmest cement is, the bestowing and receiving kindly offices, especially in distress. Now to unhinge or suspend the exercise of charity by rendering it unnecessary, relaxes every social virtue by supplanting the chief of them. The consequence is dismal: exercise of benevolence to the distressed is our firmest guard against the encroachments of selfishness: if that guard be withdrawn, selfishness will prevail, and become the ruling passion. In fact, the tax for the poor has contributed greatly to the growth of

* One exception I am fond to mention. The poor-box of the Edinburgh infirmary was neglected two or three years, little being expected from it. When opened, L. 74 and a fraction was found in it; contributed probably by the lower sort, who were ashamed to give their mite publicly.

that

that groveling passion, so conspicuous at present in England.

English authors who turn their thoughts to the poor, make heavy complaints of decaying charity, and increasing poverty : never once dreaming, that these are the genuine effects of a legal provision for the poor ; which on the one hand eradicates the virtue of charity, and on the other is a violent temptation to idleness. Wonderfully ill contrived must the English charity-laws be, when their consequences are to sap the foundation of voluntary charity ; to deprive the labouring poor of their chief comfort, that of providing for themselves and children ; to relax mutual affection between parent and child ; and to reward, instead of punishing, idleness and vice. Consider whether a legal provision for the poor, be sufficient to atone for so many evils.

No man had better opportunity than Fielding to be acquainted with the state of the poor : let us listen to him. “ That
“ the poor are a very great burden, and
“ even a nuisance to the kingdom ; that
“ the laws for relieving their distresses and
“ restraining their vices, have not answer-
“ ed ;

“ ed ; and that they are at present very
“ ill provided for and much worse go-
“ verned, are truths which every one will
“ acknowledge. Every person who hath
“ property, must feel the weight of the
“ tax that is levied for the poor ; and e-
“ very person of understanding, must see
“ how absurdly it is applied. So useless
“ indeed is this heavy tax and so wretched
“ its disposition, that it is a question,
“ whether the poor or rich are actually
“ more dissatisfied ; since the plunder of
“ the one serves so little to the real advan-
“ tage of the other ; for while a million
“ yearly is raised among the rich, many
“ of the poor are starved ; many more
“ languish in want and misery ; of the
“ rest, numbers are found begging or pil-
“ fering in the streets to-day, and to-
“ morrow are locked up in gaols and
“ Bridewells. If we were to make a pro-
“ gress through the outskirts of the me-
“ tropolis and look into the habitations of
“ the poor, we should there behold such
“ pictures of human misery, as must
“ move the compassion of every heart
“ that deserves the name of human.
“ What indeed must be his composition,
“ who

“ who could see whole families in want of
“ every necessary of life, oppressed with
“ hunger, cold, nakedness, and filth ; and
“ with diseases, the certain consequence
“ of all these ! The sufferings indeed of
“ the poor are less known than their mis-
“ deeds ; and therefore we are less apt to
“ pity them. They starve, and freeze,
“ and rot, among themselves ; but they
“ beg, and steal, and rob, among their
“ betters. There is not a parish in the li-
“ berty of Westminster, which doth not
“ raise thousands annually for the poor ;
“ and there is not a street in that liberty,
“ which doth not swarm all day with beg-
“ gars, and all night with thieves.”

There is not a single beggar to be seen in Pennsylvania. Luxury and idleness have got no footing in that happy country ; and those who suffer by misfortune, have maintenance out of the public treasury. But luxury and idleness cannot for ever be excluded ; and when they prevail, this regulation will be as pernicious in Pennsylvania, as the poor-rates are in Britain.

Of the many proposals that have been published for reforming the poor-laws, not one has pierced to the root of the evil.

None of the authors entertain the slightest doubt of a legal provision being necessary, tho' all our distresses arise evidently from that very cause. Travellers complain, of being infested with an endless number of beggars, in every English town; a very different scene from what they meet with in Holland or Switzerland. How would it surprise them to be told, that this proceeds from an overflow of charity in the good people of England!

Few institutions are more ticklish than those of charity. In London, common prostitutes are treated with singular humanity: a hospital for them when pregnant, disburdens them of their load, and nurses them till they be again fit for business: another hospital cures them of the venereal disease: and a third receives them with open arms, when, instead of desire, they become objects of aversion. Would not one imagine, that these hospitals have been erected for encouraging prostitution? They undoubtedly have that effect, tho' far from being intended. Mr Stirling, superintendent of the Edinburgh poor-house, deserves a statue for a scheme he contrived to reform common prostitutes. A number of

them were confined in a house of correction, on a daily allowance of three pence; and even part of that small pittance was embezzled by the servants of the house. Pinching hunger did not reform their manners; for being absolutely idle, they encouraged each other in vice, waiting impatiently for the hour of deliverance. Mr Stirling, with consent of the magistrates, removed them to a clean house; and instead of money, which is apt to be squandered, appointed for each a pound of oat-meal daily, with salt, water, and fire for cooking. Relieved now from distress, they longed for comfort: what would they not give for milk or ale? Work, says he, will procure you plenty. To some who offered to spin, he gave flax and wheels, engaging to pay them half the price of their yarn, retaining the other half for the materials furnished. The spinners earned about nine pence weekly, a comfortable addition to what they had before. The rest undertook to spin, one after another; and before the end of the first quarter, they were all of them intent upon work. It was a branch of his plan, to set free such as merited that favour; and some of
them

them appeared so thoroughly reformed, as to be in no danger of a relapse.

The ingenious author of *The Police of France*, who wrote in the year 1753, observes, that notwithstanding the plentiful provision for the poor in that kingdom, mentioned above, there was a general complaint of the increase of beggars and vagrants; and adds, that the French political writers, dissatisfied with their own plan, had presented several memorials to the ministry, proposing to adopt the English parochial assessments, as greatly preferable. This is a curious fact; for at that very time, people in London, no less dissatisfied with these assessments, were writing pamphlets in praise of the French hospitals. One thing is certain, that no plan hitherto invented, has given satisfaction. Whether an unexceptionable plan is at all possible, seems extremely doubtful.

In every plan for the poor that I have seen, workhouses make one article; to provide work for those who are willing, and to make those work who are unwilling. With respect to the former, men need never be idle in England for want of employment;

ployment; and they always succeed the best at the employment they chuse for themselves. With respect to the latter, punishment will not compel a man to labour: he may assume the appearance, but will make no progress; and the pretext of sickness or weakness is ever at hand for an excuse. The only compulsion to make a man work seriously, is fear of want.

A hospital for the sick, for the wounded, and for the maimed, is a right establishment; being productive of good, without doing any harm. Such a hospital should depend partly on voluntary charity; to procure which, a conviction of its being well managed, is necessary. Hospitals that have a sufficient fund of their own, and that have no dependence on the good will of others, are commonly ill managed.

Lies there any objection against a workhouse, for training to labour, destitute orphans, and begging children? It is an article in Mr Hay's plan, that the workhouse should relieve poor families of all their children above three. This has an enticing appearance, but is unsound at bottom. Children require the tenderness of

a mother, during the period of infantine diseases; and are far from being safe in the hands of mercenaries, who study nothing but their own ease and interest. Would it not be better, to distribute small sums from time to time among poor families overburdened with children, so as to relieve them from famine, not from labour? And with respect to orphans and begging children, I incline to think, that it would be a more salutary measure, to encourage mechanicks, manufacturers, and farmers above all, to educate such children. A premium for each, the half in hand, and the other half when they can work for themselves, would be a proper encouragement. The best-regulated orphan-hospital I am acquainted with, is that of Edinburgh. Orphans are taken in from every corner, provided only they be not under the age of seven, nor above that of twelve: under seven, they are too tender for a hospital; above twelve their relations can find employment for them. Beside the being taught to read and write, they are carefully instructed in some art, that may afford them comfortable subsistence.

No

No man ever called in question the utility of the marine society ; which will reflect honour on the members as long as we have a navy to protect us : they deserve a rank above that of gartered knights. That institution is the most judicious exertion of charity and patriotism, that ever existed in any country.

A sort of hospital for servants who for twenty years have faithfully adhered to the same master, would be much to my taste ; with a few adjoining acres for a kitchen-garden. The fund for purchasing, building, and maintenance, must be raised by contribution ; and none but the contributors should be entitled to offer servants to the house. By such encouragement, a malady would be remedied, that of wandering from master to master for better wages, or easier service ; which seldom fail to corrupt servants. They ought to be comfortably provided for, adding to the allowance of the house what pot-herbs are raised by their own labour. A number of virtuous men thus associated, would end their days in comfort ; and the prospect of attaining a settlement so agreeable, would form excellent servants. How advantageous

vantageous would such a hospital prove to husbandry in particular! But I confine this hospital to servants who are single. Men who have a family will be better provided separately.

Of all the mischiefs that have been engendered by over-anxiety about the poor, none have proved more fatal than a foundling-hospital. They tend to cool affection for children, still more effectually than the English parish-charity. At every occasional pinch for food, away goes a child to the hospital; and parental affection among the lower sort turns so languid, that many who are in no pinch, relieve themselves of trouble by the same means. It is affirmed, that of the children born annually in Paris, about a third part are sent to the foundling-hospital. The Paris almanack for the year 1768, mentions, that there were baptised 18,576 infants, of whom the foundling-hospital received 6025. The same almanack for the year 1773 bears, that of 18518 children born and baptised, 5989 were sent to the foundling-hospital. The proportion originally was much less; but vice advances with a swift pace. How enormous must be the degeneracy

degeneracy of the Parisian populace, and their want of parental affection !

Let us next turn to infants shut up in this hospital. Of all animals, infants of the human race are the weakest : they require a mother's affection to guard them against numberless diseases and accidents ; a wise appointment of Providence to connect parents and children in the strictest union. In a foundling-hospital, there is no fond mother to watch over her tender babe ; and the hireling nurse has no fondness but for her own little profit. Need we any other cause for the destruction of infants in a foundling-hospital, much greater in proportion than of those under the care of a mother ? And yet there is another cause equally potent, which is corrupted air. What Mr Hanway observes upon parish-workhouses, is equally applicable to a foundling-hospital. " To attempt," says he, " to nourish an infant in a workhouse, where a number of nurses are congregated into one room, and consequently the air become putrid, I will pronounce, from intimate knowledge of the subject, to be but a small remove from slaughter ; *for the child* " *must*

“ *must die.*” It is computed, that of the children in the London foundling-hospital, the half do not live a year. It appears by an account given in to parliament, that the money bestow’d on that hospital from its commencement till December 1757 amounted to L.166,000; and yet during that period, 105 persons only were put out to do for themselves. Down then with foundling-hospitals, more noxious than pestilence or famine. An infant exposed at the door of a dwelling-house, must be taken up: but in that case, which seldom happens, the infant has a better chance for life with a hired nurse than in a hospital; and a chance perhaps little worse, bad as it is, than with an unnatural mother. I approve not indeed of a quarterly payment to such a nurse: would it not do better to furnish her bare maintenance for three years; and if the child be alive at the end of that time, to give her a handsome addition?

A house of correction is necessary for good order; but belongs not to the present essay, which concerns maintenance of the poor, not punishment of vagrants. I shall only by the way borrow a thought

from Fielding, that fasting is the proper punishment of profligacy, not any punishment that is attended with shame. Punishment, he observes, that deprives a man of all sense of honour, never will contribute to make him virtuous.

Charity-schools may have been proper, when few could read, and fewer write; but these arts are now so common, that in most families children may be taught to read at home, and to write in a private school at little expence. Charity-schools at present are more hurtful than beneficial: young persons who continue there so long as to read and write fluently, become too delicate for hard labour, and too proud for ordinary labour. Knowledge is a dangerous acquisition to the labouring poor: the more of it that is possessed by a shepherd, a ploughman, or any drudge, the less satisfaction he will have in labour. The only plausible argument for a charity-school, is, "That children
" of the labouring poor are taught there
" the principles of religion and of morality, which they cannot acquire at
" home." The argument would be invincible, if without regular education we
could

could have no knowledge of these principles. But Providence has not left man in a state so imperfect: religion and morality are stamped on his heart; and none can be ignorant of them, who attend to their own perceptions. Education is indeed of use to ripen such perceptions; and it is of singular use to those who have time for reading and thinking; but education in a charity-school is so slight, as to render it doubtful, whether it be not more hurtful by fostering laziness, than advantageous by conveying instruction. The natural impressions of religion and morality, if not obscured by vicious habits, are sufficient for good conduct: preserve a man from vice by constant labour, and he will not be deficient in his duty either to God or to man. Hesiod, an ancient and respectable poet, says, that God hath placed labour as a guard to virtue. More integrity accordingly will be found among a number of industrious poor, taken at random, than among the same number in any other class.

I heartily approve every regulation that tends to prevent idleness. Chief Justice Hale says, "That prevention of poverty

“ and idleness would do more good than
“ all the gibbets, whipping-posts, and
“ gaols in the kingdom.” In that view,
gaming-houses ought to be heavily taxed,
as well as horse-racing, cock-fighting, and
all meetings that encourage idleness. The
admitting low people to vote for members
of parliament, is a source of idleness, cor-
ruption, and poverty. The same privilege
is ruinous to every small parliament-bo-
rough. Nor have I any difficulty to pro-
nounce, that the admitting the populace
to vote in the election of a parish-minister,
a frequent practice in Scotland, is pro-
ductive of the same pernicious effects.

What then is to be the result of the
foregoing enquiry? Is it from defect of
invention that a good legal establishment
for the poor is not yet discovered? or is it
impracticable to make any legal establish-
ment that is not fraught with corruption?
I incline to the latter, for the following
reason, no less obvious than solid, That
in a legal establishment for the poor, no
distinction can be made between virtue
and vice; and consequently that every
such establishment must be a premium for
idleness. And where is the necessity, af-
ter

ter all, of any public establishment? By what unhappy prejudice have people been led to think, that the Author of our nature, so beneficent to his favourite man in every other respect, has abandoned the indigent to famine and death, if municipal law interpose not? We need but inspect the human heart to be convinced, that persons in distress are his peculiar care. Not only has he made it our duty to afford them relief, but has superadded the passion of pity to enforce the performance of that duty. This branch of our nature fulfils in perfection all the salutary purposes of charity, without admitting any one of the evils that a legal provision is fraught with. The contrivance, at the same time, is extremely simple: it leaves to every man the objects as well as measure of his charity. No man esteems it a duty to relieve wretches reduced to poverty by idleness and profligacy: they move not our pity; nor do they expect any good from us. Wisely therefore is it ordered by Providence, that charity should in every respect be voluntary, to prevent the idle and profligate from depending on it for support.

This

This plan is, in many respects excellent. The exercise of charity, when free from compulsion, is highly pleasant. There is indeed little pleasure where charity is rendered unnecessary by municipal law ; but were that law laid aside, the gratification of pity would become one of our sweetest enjoyments. Charity, like other affections, is invigorated by exercise, and no less enfeebled by disuse. Providence withal hath scattered benevolence among the sons of men with a liberal hand : and notwithstanding the obstruction of municipal law, seldom is there found one so obdurate, as to resist the impulse of compassion, when a proper object is presented. In a well regulated government, promoting industry and virtue, the persons who need charity are not many ; and such persons may with assurance depend on the charity of their neighbours *.

It may at the same time be boldly affirmed, that those who need charity, would be more comfortably provided for by the

* The Italians are not more remarkable for a charitable disposition, than their neighbours. No fewer however than seventy thousand mendicant friars live there upon voluntary charity ; and I have not heard that any one of them ever died of want.

plan of Providence, than by any legal establishment. Creatures loathsome by disease or nastiness, affect the air in a poor-house; and have little chance for life, without more care and kindness than can be expected from servants, rendered callous by continual scenes of misery. Consider, on the other hand, the consequences of voluntary charity, equally agreeable to the giver and receiver. The kindly connection it forms between them, grows stronger and stronger by reiteration; and squalid poverty, far from being an obstruction, excites a degree of pity, proportioned to the distress. It may happen for a wonder, that an indigent person is overlooked; but for one who will suffer by such neglect, multitudes suffer by compelled charity.

But what I insist on with peculiar satisfaction is, that natural charity is an illustrious support to virtue. Indigent virtue can never fail of relief, because it never fails to enflame compassion. Indigent vice, on the contrary, raises indignation more than pity (*a*); and therefore can have little prospect of relief. What a glorious en-

(*a*) *Elements of Criticism*, ch. 2. part 7.

citement to industry and virtue, and how discouraging to idleness and vice! Will it be thought chimerical to observe further, that to leave the indigent on Providence, will tend to improve manners as well as virtue among the lower classes? No man can think himself secure against being reduced to depend on his neighbours for bread. The influence of that thought, will make every one solicitous to acquire the good will of others. Lamentable it is, that so beautiful a structure should be razed to the foundation by municipal law, which, in providing for the poor, makes no distinction between virtue and vice. The execution of the poor-laws would be impracticable, were such a distinction attempted by enquiring into the conduct and character of every *pauper*. Where are judges to be found who will patiently follow out such a dark and intricate expiscation? To accomplish the task, a man must abandon every other concern.

In the first English statutes mentioned above, the legislature appear carefully to have avoided compulsory charity: every measure for promoting voluntary charity was first try'd, before the fatal blow was

struck, empowering parish-officers to impose a tax for the poor. The legislature certainly did not foresee the baneful consequences : but how came they not to see that they were distrustful Providence, declaring in effect, that the plan established by our Maker for the poor, is insufficient? Many are the municipal laws that enforce the laws of nature, by additional rewards and punishments ; but it was singularly bold to abolish the natural law of charity, by establishing a legal tax in its stead. Men will always be mending : what a confused jumble do they make, when they attempt to mend the laws of Nature ! Leave Nature to her own operations : she understands them the best.

Few regulations are more plausible than what are political ; and yet few are more deceitful. A writer, blind with partiality for his country, makes the following observations upon the 43^o Elisab. establishing a maintenance for the poor. “ Laws
“ have been enacted in many other coun-
“ tries, which have punished the idle beg-
“ gar, and exhorted the rich to extend
“ their charity to the poor : but it is pe-
“ culiar to the humanity of England, to
VOL. III. N “ have

“ have made their support a matter of
“ obligation and necessity on the more
“ wealthy. The English seem to be the
“ first nation in Europe in science, arts,
“ and arms: they likewise are possessed
“ of the freest and most perfect of consti-
“ tutions, and the blessings consequential
“ to that freedom. If virtues in an indi-
“ vidual are sometimes supposed to be re-
“ warded in this world, I do not think it
“ too presumptuous to suppose, that na-
“ tional virtues may likewise meet with
“ their reward. England hath, to its pe-
“ culiar honour, not only made their poor
“ free, but hath provided a certain and
“ solid establishment to prevent their ne-
“ cessities and indigence, when they a-
“ rise from what the law calls *the act of*
“ *God*: and are not these beneficent and
“ humane attentions to the miseries of our
“ fellow-creatures, the first of those poor
“ pleas which we are capable of offering,
“ in behalf of our imperfections, to an all-
“ wise and merciful Creator!” To this
writer I oppose another, whose reflections
are more sound. “ In England, there is
“ an act of the legislature, obliging every
“ parish to maintain its own poor. Scarce
“ any

“ any man living, who has not seen the
“ effects of this law, but must approve of
“ it ; and yet such are its effects, that the
“ streets of London are filled with objects
“ of misery beyond what is seen in any
“ other city. The labouring poor, de-
“ pending on this law to be provided in
“ sickness and old age, are little solicitous
“ to save, and become habitually profuse.
“ The principle of charity is established
“ by Providence in the human heart, for
“ relieving those who are disabled to work
“ for themselves. And if the labouring
“ poor had no dependence but on the
“ principle of charity, they would be
“ more religious ; and if they were influ-
“ enced by religion, they would be less a-
“ bandoned in their behaviour. Thus
“ this seeming-good act turns to a na-
“ tional evil : there is more distress a-
“ mong the poor in London than any
“ where in Europe ; and more drunken-
“ ness both in males and females (a).”

I am aware, that during the reign of E-
lisabeth, some compulsion might be ne-
cessary to preserve the poor from starving.

(a) Author of Angeloni's letters.

Her father Henry had sequestered all the hospitals, a hundred and ten in number, and squandered their revenues; he had also demolished all the abbeys. By these means, the poor were reduced to a miserable condition; especially as private charity, for want of exercise, was at a low ebb. That critical juncture required indeed help from the legislature: and a temporary provision for the poor would have been a proper measure; so contrived as not to supersede voluntary charity, but rather to promote it. Unlucky it is for England, that such a measure was overlooked; but Queen Elisabeth and her parliaments had not the talent of foreseeing consequences without the aid of experience. A perpetual tax for the poor was imposed, the most pernicious tax that ever was imposed in any country.

With respect to the present times, the reason now given pleads against abolishing at once a legal provision for the poor. It may be taken for granted, that charity is in England not more vigorous at present, than it was in the days of Elisabeth. Would our ministry but lead the way, by showing some zeal for a reformation, expedients

pedients would probably be invented for supporting the poor, without unhinging voluntary charity. The following expedient is proposed, merely as a specimen. Let a tax be imposed by parliament on every parish for their poor, variable in proportion to the number; but not to exceed the half of what is necessary: directing the landholders to make up quarterly, a list of the names and condition of such persons as in their opinion deserve charity; with an estimate of what each ought to have weekly. The public tax makes the half, and the other half is to be raised by voluntary contribution. To prevent collusion, the roll of the poor, and their weekly appointment, with a subscription of gentlemen for their part of the sum, shall be examined by the justices of peace at a quarterly meeting; who, on receiving satisfaction, must order the sum arising from the public tax to be distributed among the poor contained in the roll, according to the estimate of the landholders. As the public fund lies dead till the subscription be completed, it is not to be imagined that any gentleman will stand out it would be a public imputation on his character,

character. Far from apprehending any deficiency, confident I am, that every gentleman would consider it as honourable to contribute largely. This agreeable work must be blended with some degree of severity, that of excluding from the roll every profligate, male or female. If that rule be strictly followed out, the innocent poor will diminish daily ; so as in time to be safely left upon voluntary charity, without necessity of any tax.

But must miserable wretches reduced to poverty by idleness or intemperance, be, in a Christian country, abandoned to diseases and famine. This is the argument, shallow as it is, that has corrupted the industry of England, and reduced multitudes to diseases and famine. Those who are able to work, may be locked up in a house of correction, to be fed with bread and water ; but with liberty of working for themselves. And as for the remainder, their case is not desperate, when they have access to such tender-hearted persons as are more eminent for pity than for principle. If by neglect or oversight any happen to die of want, the example will tend more to reformation,

formation, than the most pathetic discourse from the pulpit.

Even at the hazard of losing a few lives by neglect or oversight, common begging ought absolutely to be prohibited. The most profligate, are the most impudent and the most expert at feigning distress. If begging be indulged to any, all will rush into the public: idlers are fond of that wandering and indolent sort of life; and there is no temptation to idleness more successful, than liberty to beg. In order to be relieved from common beggars, it has been proposed, to fine those who give them alms. Little penetration must they have, to whom the insufficiency of such a remedy is not palpable. It is easy to give alms without being seen; and compassion will extort alms, even at the hazard of suffering for it; not to mention, that every one in such a case would avoid the odious character of an informer. The following remedy is suggested, as what probably may answer. An officer must be appointed in every parish, with a competent salary, for apprehending and carrying to the workhouse every strolling beggar; under the penalty of losing his office, with what salary

lary is due to him, if any beggar be found strolling four and twenty hours after the fact comes to his knowledge. In the workhouse such beggars shall be fed with bread and water for a year, but with liberty of working for themselves.

I declare resolutely against a perpetual tax for the poor. But if there must be such a tax, I know of none less subversive of industry and morals than that established in Scotland, obliging the landholders in every parish to meet at stated times, in order to provide a fund for the poor; but leaving the objects of their charity, and the measure, to their own humanity and discretion. In this plan, there is no encroachment on the natural duty of charity, but only that the minority must submit to the opinion of the majority.

In large towns, where the character and circumstances of the poor are not so well known as in country-parishes, the following variation is proposed. Instead of landholders, who are proper in country-parishes; let there be in each town-parish a standing committee chosen by the proprietors of houses, the third part to be changed annually. This committee with the
I minister,

minister, make up a list of such as deserve charity, adding an estimate of what, with their own labour, may be sufficient for each of them. The minister, with one or two of the committee, carry about this list to every family that can afford charity, suggesting what may be proper for each to contribute. This list, with an addition of the sum contributed or promised by each householder, must be affixed on the principal door of the parish-church, to honour the contributors, and to inform the poor of the provision made for them. Some such mode may probably be effectual, without transgressing the bounds of voluntary charity. But if any one obstinately refuse to contribute after several applications, the committee at their discretion may tax him. If it be the possessor who declines contributing, the tax must be laid upon him, reserving relief against his landlord.

In great towns, the poor, who ought to be prohibited from begging, are less known than in country-parishes: and among a croud of inhabitants, it is easier for an individual to escape the public eye when he with-holds charity, than in country-pa-

rishes. Both defects would be remedied by the plan above proposed : it will bring to light, in great cities, the poor who deserve charity ; and it will bring to light every person who with-holds charity.

In every regulation for the poor, English and Scotch, it is taken for granted, that the poor are to be maintained in their own houses. Parochial poor-houses are creeping into fashion : a few are already erected both in England and Scotland ; and there is depending in parliament a plan for establishing poor-houses in every part of England. Yet whether they ought to be preferred to the accustomed mode, deserves serious consideration. The erection and management of a poor-house are expensive articles ; and if they do not upon the whole appear clearly beneficial, it is better to stop short in time.

Economy is the great motive that inclines people to this new mode of providing for the poor. It is imagined, that numbers collected at a common table ; can be maintained at less expence than in separate houses ; and foot-soldiers are given for an example, who could not live on their pay if they did not mess together.

But

But the cases are not parallel. Soldiers, having the management of their pay, can club for a bit of meat. But as the inhabitants of a poor-house are maintained by the public, the same quantity of provisions must be allotted to each ; as there can be no good rule for separating those who eat much from those who eat little. The consequence is what may be expected : the bulk of them reserve part of their victuals for purchasing ale or spirits. It is vain to expect work from them : poor wretches void of shame will never work seriously, where the profit accrues to the public, not to themselves. Hunger is the only effectual means for compelling such persons to work.

Where the poor are supported in their own houses, the first thing that is done, or ought to be done, is to estimate what each can earn by their own labour ; and as far only as that falls short of maintenance, is there place for charity. They will be as industrious as possible, because they work for themselves ; and a weekly sum of charity under their own management, will turn to better account, than in a poor-house, under the direction of mer-

canaries. The quantity of food for health depends greatly on custom. Barbequius observes, that the Turks eat very little flesh-meat; and that the Janizaries in particular, at that time a most formidable infantry, were maintained at an expence far below that of a German. Wafers, cakes, boiled rice, with small bits of mutton or pullet, were their highest entertainment, fermented liquors being absolutely prohibited. The famous Montecuculi says, that the Janizaries eat but once a-day, about sun-set; and that custom makes it easy. Negroes are maintain'd in the West Indies at a very small expence. A bit of ground is allotted to them for raising vegetables, which they cultivate on Sunday, being employ'd all the rest of the week in labouring for their masters. They receive a weekly allowance of dry'd fish, about a pound and a half; and their only drink is water. Yet by vegetables and water with a morsel of dry'd fish, these people are sufficiently nourished to perform the hardest labour in a most enervating climate. I would not have the poor to be pampered, which might prove a bad example to the industrious; if they be supported

ported in the most frugal manner, the duty of charity is fulfilled. And in no other manner can they be supported so frugally, as to leave to their own disposal what they receive in charity. Not a penny will be laid out on fermented liquors, unless perhaps as a medicine in sickness. Nor does their low fare call for pity. Ale makes no part of the maintenance of those in Scotland who live by the sweat of their brows. Water is their only drink; and yet they live comfortably, without ever thinking of pitying themselves. Many gentlemen drink nothing but water; who feel no decay either in health or vigour. The person however who should propose to banish ale from a poor-house, would be exclaimed against as hard-hearted and void of charity. The difference indeed is great between what is done voluntarily, and what is done by compulsion. It is provoking to hear of the petulance and even luxury of the English poor. Not a person in London who lives by the parish-charity will deign to eat brown bread; and in several parts of England, many who receive large sums from that fund, are in the constant custom of drinking tea
twice

twice a-day. Will one incline to labour where idleness and beggary are so much encouraged?

But what objection, it will be urged, lies against adopting in a poor-house the plan mentioned, giving to no person in money more than what his work, justly estimated, falls short of maintenance? It is easy to foresee, that this plan can never answer in a poor-house. The materials for work must be provided by mercenary officers; who must also be trusted with the disposal of the made work, for behoof of the poor people. These operations may go on sweetly a year or two, under the influence of novelty and zeal for improvement; but it would be chimerical to expect for ever strict fidelity in mercenary officers, whose management cannot easily be checked. Computing the expence of this operose management, and giving allowance for endless frauds in purchasing and selling, I boldly affirm, that the plan would turn to no account. Consider next the weekly sum given in charity: people confined in a poor-house have no means for purchasing necessaries but at a futlery, where

where they will certainly be imposed on, and their money go no length.

We are now ripe for a comparison with respect to economy. Many a householder in Edinburgh makes a shift to maintain a family with their gain of four shillings *per* week, amounting to ten pounds eight shillings yearly. Seldom are there fewer than four or five persons in such a family; the husband, the wife, and two or three children. Thus four or five persons can be maintain'd under eleven pounds yearly. But are they maintain'd so cheap in the Edinburgh poor-house? Not a single person there but at an average costs the public at least four pounds yearly. Nor is this all. A great sum remains to be taken into the computation, the interest of the sum for building, yearly reparations, expence of management, wages to servants, male and female. A proportion of this great sum must be laid upon each person, which swells the expence of their maintenance. And when every particular is taken into the account, I have no hesitation to pronounce, that laying aside labour altogether, a man can make a shift to maintain himself

self privately at half of the expence that is necessary in a poor-house.

So far we have travelled on solid ground; and what follows is equally solid. Among the industrious, not many are reduced so low, but that they can make some shift for themselves. The quantity of labour that can be performed by those who require aid, cannot be brought under any accurate estimation. To pave the way to a conjecture, those who are reduced to poverty by dissoluteness or sheer idleness, ought absolutely to be rejected as unworthy of public charity. If such wretches can prevail on the tender-hearted to relieve them privately, so far well: they ought not to be indulged with any other hope. Now laying these aside, the quantity of labour may be fairly computed as half maintenance. Here then is another great article saved to the public. If a man can be maintained privately at half of what is necessary in a poor-house, his work, reckoning it half of his maintenance, brings down the sum to the fourth part of what is necessary in a poor-house.

Undistinguished charity to the deserving and undeserving, has multiply'd the poor;

and will multiply them more and more without end. Let it be publicly known that the dissolute and idle have no chance to be put on a charity-roll; the poor, instead of increasing, will gradually diminish, till none be left but proper objects of charity, such as have been reduced to indigence by old age or innocent misfortune. And if that rule be strictly adhered to, the maintenance of the poor will not be a heavy burden. After all, a house for the poor may possibly be a frugal scheme in England where the parish-rates are high, in the town of Bedford for example. In Scotland, it is undoubtedly a very unfrugal scheme.

Hitherto of a poor-house with respect to economy. There is another point of still greater moment; which is to consider the influence it has on the manners of the inhabitants. A number of persons, strangers to each other, and differing in temper and manners, can never live comfortably together: will ever the sober and innocent make a tolerable society with the idle and profligate? In our poor-houses accordingly, quarrels and complaints are endless. The family society and that of a nation un-

der government, are prompted by the common nature of man ; and none other. In monasteries and nunneries, envy, detraction, and heart-burning, never cease. Sorry I am to observe, that in feminaries of learning concord and good-will do not always prevail, even among the professors. What adds greatly to the disease in a poor-house, is that the people shut up there, being secure of maintenance, are reduced to a state of absolute idleness, for it is in vain to think of making them work : they have no care, nothing to keep the blood in motion. Attend to a state so different from what is natural to us. Those who are innocent and harmless, will languish, turn dispirited, and tire of life. Those of a bustling and restless temper, will turn sour and peevish for want of occupation : they will murmur against their superiors, pick quarrels with their neighbours, and sow discord every where. The worst of all is, that a poor-house never fails to corrupt the morals of the inhabitants : nothing tends so much to promote vice and immorality, as idleness among a number of low people collected in one place. Among no set of people does profligacy more abound,

bound, than among the seamen in Greenwich hospital.

A poor-house tends to corrupt the body no less than the mind. It is a nursery of diseases, fostered by dirtiness and crouding.

To this scene let us oppose the condition of those who are supported in their own houses. They are laid under the necessity of working with as much assiduity as ever; and as the sum given them in charity is at their own disposal, they are careful to lay it out in the most frugal manner. If by parsimony they can save any small part, it is their own; and the hope of encreasing this little stock, supports their spirits and redoubles their industry. They live innocently and comfortably, because they live industriously; and industry, as every one knows, is the chief pleasure of life to those who have acquired the habit of being constantly employ'd.

S K E T C H XI.

A Great City considered in Physical, Moral, and Political Views.

IN all ages an opinion has been prevalent, that a great city is a great evil ; and that a capital may be too great for the state, as a head may be for the body. Considering however the very shallow reasons that have been given for this opinion, it should seem to be but slightly founded. There are several ordinances limiting the extent of Paris, and prohibiting new buildings beyond the prescribed bounds ; the first of which is by Henry II. *ann.* 1549. These ordinances have been renewed from time to time, down to the 1672, in which year there is an edict of Louis XIV. to the same purpose. The reasons assigned are, “ First, That by enlarging the city, the “ air would be rendered unwholesome. “ Second, That cleaning the streets would “ prove a great additional labour. Third, “ That adding to the number of inhabitants would raise the price of provisions,

“ fions, of labour, and of manufactures.
“ Fourth, That ground would be covered
“ with buildings instead of corn, which
“ might hazard a scarcity. Fifth, That
“ the country would be depopulated by
“ the desire that people have to resort to
“ the capital. And, lastly, That the dif-
“ ficulty of governing such numbers,
“ would be an encouragement to robbery
“ and murder.”

In these reasons, the limiting the extent of the city and the limiting the number of inhabitants are jumbled together, as if they were the same. The only reasons that regard the former, are the second and fourth; and these, at best, are trifling. The first reason urged against enlarging the city, is a solid reason for enlarging it, supposing the numbers to be limited; for crowding is an infallible means to render the air unwholesome. Paris, with the same number of inhabitants that were in the days of the fourth Henry, occupies thrice the space, much to the health as well as comfort of the inhabitants. Had the ordinances mentioned been made effectual, the houses in Paris must all have been built story above story, ascending to the

the sky like the tower of Babel. Before the great fire *anno* 1666, the plague was frequent in London; but by widening the streets and enlarging the houses, there has not since been known in that great city, any contagious distemper that deserves the name of a plague. The third, fifth, and last reasons, conclude against permitting any addition to the number of inhabitants; but conclude nothing against enlarging the town. In a word, the measure adopted in these ordinances has little or no tendency to correct the evils complained of; and infallibly would enflame the chief of them. The measure that ought to have been adopted, is to limit the number of inhabitants, not the extent of the town.

Queen Elifabeth of England, copying the French ordinances, issued a proclamation *anno* 1602, prohibiting any new buildings within three miles of London. The preamble is in the following words:

“ That foreseeing the great and manifold
“ inconveniencies and mischiefs which
“ daily grow, and are likely to increase,
“ in the city and suburbs of London, by
“ confluence of people to inhabit the
“ same;

“ fame ; not only by reason that such
“ multitudes can hardly be governed, to
“ serve God and obey her Majesty, with-
“ out constituting an addition of new of-
“ ficers, and enlarging their authority ;
“ but also can hardly be provided of food
“ and other necessaries at a reasonable
“ price ; and finally, that as such multi-
“ tudes of people, many of them poor
“ who must live by begging or worse
“ means, are heaped up together, and in
“ a sort smothered with many children
“ and servants in one house or small te-
“ nement ; it must needs follow, if any
“ plague or other universal sickness come
“ amongst them, that it would presently
“ spread through the whole city and con-
“ fines, and also into all parts of the realm.”

There appears as little accuracy in this proclamation, as in the French ordinances. The same error is observable in both, which is the limiting the extent of the city, instead of limiting the number of inhabitants. True it is indeed, that the regulation would have a better effect in London than in Paris. As stone is in plenty about Paris, houses there may be carried to a very great height ; and are
actually

actually so carried in the old town : but there being no stone about London, the houses formerly were built of timber, now of brick ; materials too frail for a lofty edifice.

Proceeding to particulars, the first objection, which is the expence of governing a great multitude, concludes against the number of inhabitants, not against the extent of the city. At the same time, the objection is at best doubtful in point of fact. Tho' vices abound in a great city, requiring the strictest attention of the magistrate ; yet with a well-regulated police, it appears less expensive to govern 600,000 in one city, than the same number in ten different cities. The second objection, viz. the high price of provisions, strikes only against numbers, not extent. Beside, whatever might have been the case in the days of Elisabeth, when agriculture and internal commerce were in their infancy ; there are at present not many towns in England, where a temperate man may live cheaper than in London. The hazard of contagious distempers, which is the third objection, is an invincible argument against limiting the extent of a great town.

It is mentioned above, that from the year 1666, when the streets were widened and the houses enlarged, London has never been once visited by the plague. If the proclamation had taken effect, the houses must have been so crowded upon each other, and the streets so contracted, as to have occasioned plagues still more frequently than before the year 1666.

The Queen's immediate successors were not more clear-sighted than she had been. In the year 1624, King James issued a proclamation against building in London upon new foundations. Charles I. issued two proclamations to the same purpose; one in the year 1625, and one in the year 1630.

The progress of political knowledge has unfolded many bad effects of a great city, more weighty than any urged in these proclamations. The first I shall mention, is, that people born and bred in a great city are commonly weak and effeminate. Vegetius (*a*) observing, that men bred to husbandry make the best soldiers, adds what follows. "Interdum tamen

(*a*) De re militari, lib. 1. cap. 3.

“ neceſſitas exigit, etiam urbanos ad ar-
 “ ma compelli : qui ubi nomen dedere
 “ militiæ, primum laborare, decurrere,
 “ portare pondus, et ſolem pulveremque
 “ ferre, condiſcant ; parco victu utantur
 “ et ruſtico ; interdum ſub divo, inter-
 “ dum ſub papilionibus, commorentur.
 “ Tunc demum ad uſum erudiantur ar-
 “ morum : et ſi longior expeditio emergit,
 “ in angariis plurimum detinendi ſunt,
 “ proculque habendi a civitatis illecebris :
 “ ut eo modo, et corporibus eorum robur
 “ accedat, et animis *.” The luxury of
 a great city deſcends from the higheſt to

* “ But ſometimes there is a neceſſity for arming
 “ the townſpeople, and calling them out to ſervice.
 “ When this is the caſe, it ought to be the firſt
 “ care, to enure them to labour, to march them
 “ up and down the country, to make them carry
 “ heavy burdens, and to harden them againſt the
 “ weather. Their food ſhould be coarſe and ſcanty,
 “ and they ſhould be habituated to ſleep alternately
 “ in their tents, and in the open air. Then is the
 “ time to inſtruct them in the exerciſe of their arms.
 “ If the expedition is a diſtant one, they ſhould be
 “ chiefly employ’d in the ſtations of poſts or ex-
 “ preſſes, and removed as much as poſſible from
 “ the dangerous allurements that abound in large
 “ cities ; that thus they may be enervated both
 “ in mind and body.”

the

the lowest, infecting all ranks of men ; and there is little opportunity in it for such exercise as to render the body vigorous and robust.

The foregoing is a physical objection against a great city : the next regards morality. Virtue is exerted chiefly in restraint : vice, in giving freedom to desire. Moderation and self-command form a character the most susceptible of virtue : superfluity of animal spirits, and love of pleasure, form a character the most liable to vice. Low vices, pilfering for example, or lying, draw few or no imitators ; but vices that indicate a soul above restraint, produce many admirers. Where a man boldly struggles against unlawful restraint, he is justly applauded and imitated ; and the vulgar are not apt to distinguish nicely between lawful and unlawful restraint : the boldness is visible, and they pierce no deeper. It is the unruly boy, full of animal spirits, who at public school is admired and imitated ; not the virtuous and modest. Vices accordingly that show spirit, are extremely infectious ; virtue very little. Hence the corruption of a great city, which increases more and more in

proportion to the number of inhabitants. But it is sufficient here barely to mention that objection, because it has been formerly insisted on.

The following bad effects are more of a political nature. A great town is a professed enemy to the free circulation of money. The current coin is accumulated in the capital: and distant provinces must sink into idleness; for without ready money neither arts nor manufactures can flourish. Thus we find less and less activity, in proportion commonly to the distance from the capital; and an absolute torpor in the extremities. The city of Milan affords a good proof of this observation. The money that the Emperor of Germany draws from it in taxes is carried to Vienna; not a farthing left but what is barely sufficient to defray the expence of government. Manufactures and commerce have gradually declined in proportion to the scarcity of money; and that city which the last century contained 300,000 inhabitants, cannot now muster above 90,000 *. It may be observed beside, that

as

* Is not the following inference from these premises

as horses in a great city must be provided with provender from a distance, the country is robbed of its dung, which goes to the rich fields round the city. But as manure laid upon poor land, is of more advantage to the farmer, than upon what is already highly improved, the depriving distant parts of manure is a loss to the nation in general. Nor is this all: The dung of an extensive city, the bulk of it at least, is so remote from the fields to which it must be carried, that the expence of carriage swallows up the profit.

Another bad effect of accumulating money in the capital is, that it raises the price of labour. The temptation of high wages in the capital, robs the country of its best

misses well founded, that it would be a ruinous measure to add Bengal to the British dominions? In what manner would the territorial revenues and other taxes be remitted to London? If in hard coin, that country would in time be drained of money, its manufactures would be annihilated, and depopulation ensue. If remitted in commodities, the public would be cheated, and little be added to the revenue. A land-tax laid on as in Britain would be preferable in every respect; for it would be paid by the East-India company as proprietors of Bengal without deduction of a farthing.

hands.

hands. And as they who resort to the capital are commonly young people, who remove as soon as they are fit for work, distant provinces are burdened with their maintenance, without reaping any benefit by their labour.

But of all, the most deplorable effect of a great city, is the preventing of population, by shortening the lives of its inhabitants. Does a capital swell in proportion to the numbers that are drained from the country? Far from it. The air of a populous city is infected by multitudes crowded together; and people there seldom make out the usual time of life. With respect to London in particular, the fact cannot be dissembled. The burials in that immense city greatly exceed the births: the difference some affirm to be no less than ten thousand yearly: by the most moderate computation, not under seven or eight thousand. As London is far from being on the decline, that number must be supplied by the country; and the annual supply amounts probably to a greater number, than were needed annually for recruiting our armies and navies in the late war with France. If so, London is a
greater

greater enemy to population, than a bloody war would be, supposing it even to be perpetual. What an enormous tax is Britain thus subjected to for supporting her capital ! The rearing and educating yearly for London 7 or 8000 persons, require an immense sum.

In Paris, if the bills of mortality can be relied on, the births and burials are nearly equal, being each of them about 19,000 yearly ; and according to that computation, Paris should need no recruits from the country. But in that city, the bills of mortality cannot be depended on for burials. It is there universally the practice of high and low, to have their infants nursed in the country, till they be three years of age ; and consequently those who die before that age, are not inlisted. What proportion these bear to the whole is uncertain. But a guess may be made from such as die in London before the age of three, which are computed to be one half of the whole that die (a). Now giving the utmost allowance for the healthiness of the country above that of a town, children from Paris that die in the country

(a) See Dr Price, p. 362.

before

before the age of three, cannot be brought so low as a third of those who die. On the other hand, the London bills of mortality are less to be depended on for births than for burials. None are included but infants baptized by clergymen of the English church; and the numerous children of Papists, Dissenters, and other sectaries, are left out of the account. Upon the whole, the difference between the births and burials in Paris and in London, is much less than it appears to be on comparing the bills of mortality of these two cities.

At the same time, giving full allowance for children who are not brought into the London bills of mortality, there is the highest probability that a greater number of children are born in Paris than in London; and consequently, that the former requires fewer recruits from the country, than the latter. In Paris, domestic servants are encouraged to marry: they are observed to be more settled than when bachelors, and more attentive to their duty. In London, such marriages are discouraged, as rendering a servant more attentive to his own family than to that of his master. But a servant attentive to his own
2 family,

family, will not, for his own sake, neglect that of his master. At any rate, is he not more to be depended on, than a servant who continues single? What can be expected of idle and pampered bachelors, but debauchery and every sort of corruption? Nothing restrains them from absolute profligacy, but the eye of the master; who for that reason is their aversion not their love. If the poor-laws be named the folio of corruption, bachelor-servants in London may well be considered as a large appendix. And this attracts the eye to the poor-laws, which indeed make the chief difference between Paris and London, with respect to the present point. In Paris, certain funds are established for the poor, the yearly produce of which admits but a limited number. As that fund is always pre-occupied, the low people who are not on the list, have little or no prospect of bread, but from their own industry; and to the industrious, marriage is in a great measure necessary. In London, a parish is taxed in proportion to the number of its poor; and every person who is pleased to be idle, is entitled to maintenance. Most things thrive by encour-

ragement, and idleness above all. Certainty of maintenance, renders the low people in England idle and profligate ; especially in London, where luxury prevails, and infects every rank. So insolent are the London poor, that scarce one of them will condescend to eat brown bread. There are accordingly in London, a much greater number of idle and profligate wretches, than in Paris, or in any other town in proportion to the number of inhabitants. These wretches, in Doctor Swift's style, never think of posterity, because posterity never thinks of them : men who hunt after pleasure, and live from day to day, have no notion of submitting to the burden of a family. These causes produce a greater number of children in Paris than in London ; tho' probably they differ not much in populousness.

I shall add but one other objection to a great city, which is not slight. An overgrown capital, far above a rival, has, by numbers and riches, a distressing influence in public affairs. The populace are ductile, and easily misled by ambitious and designing magistrates. Nor are there wanting critical times, in which such
magistrates,

magistrates, acquiring artificial influence, may have power to disturb the public peace. That an overgrown capital may prove dangerous to sovereignty, has more than once been experienced both in Paris and London.

It would give one the spleen, to hear the French and English zealously disputing about the extent of their capitals, as if the prosperity of their country depended on that circumstance. To me it appears like one glorying in the king's-evil, or in any contagious distemper. Much better employ'd would they be, in contriving means for lessening these cities. There is not a political measure, that would tend more to aggrandize the kingdom of France, or of Britain, than to split its capital into several great towns. My plan would be, to confine the inhabitants of London to 100,000, composed of the King and his household, supreme courts of justice, government-boards, prime nobility and gentry, with necessary shopkeepers, artists, and other dependents. Let the rest of the inhabitants be distributed into nine towns properly situated, some for internal commerce, some for foreign. Such a plan

would diffuse life and vigour through every corner of the island.

To execute such a plan, would, I acknowledge, require great penetration and much perseverance. I shall suggest what occurs at present. The first step must be, to mark proper spots for the nine towns, the most advantageous for trade, or for manufactures. If any of these spots be occupied already with small towns, so much the better. The next step is a capitation-tax on the inhabitants of London; the sum levied to be appropriated for encouraging the new towns. One encouragement would have a good effect; which is, a premium to every man who builds in any of these towns, more or less, in proportion to the size of the house. This tax would banish from London, every manufacture but of the most lucrative kind. When by this means, the inhabitants of London are reduced to a number not much above 100,000, the near prospect of being relieved from the tax, will make householders active to banish all above that number; and to prevent a renewal of the tax, a greater number will never again be permitted. It would require much political
skill

skill to proportion the sums to be levied and distributed, so as to have their proper effect, without overburdening the capital on the one hand, or giving too great encouragement for building on the other, which might tempt people to build for the premium merely, without any further view. Much will depend on an advantageous situation: houses built there will always find inhabitants.

The two great cities of London and Westminster are extremely ill fitted for local union. The latter, the seat of government and of the noblesse, infects the former with luxury and with love of show. The former, the seat of commerce, infects the latter with love of gain. The mixture of these opposite passions, is productive of every groveling vice.

S K E T C H

S K E T C H XII.

Origin and Progress of American Nations.

HAVING no authentic materials for a natural history of all the Americans, the following observations are confined to a few tribes, the best known ; and to the kingdoms of Peru and Mexico, as they were at the date of the Spanish conquest.

As there has not been discovered any passage by land to America from the old world, no problem has more embarrassed the learned, than to account for the origin of American nations : there are as many different opinions as there are writers. Many attempts have been made for discovering a passage by land ; but hitherto in vain. Kamtskatka, it is true, is divided from America by a narrow strait, full of islands : and M. Buffon, to render the passage still more easy than by these islands, conjectures, that thereabout there may formerly have been a land-passage, swallowed up in later times by the ocean.

There

There is indeed great appearance of truth in this conjecture ; as all the quadrupeds of the north of Asia seem to have made their way to America ; the bear, for example, the roe, the deer, the rain-deer, the beaver, the wolf, the fox, the hare, the rat, the mole. He admits, that in America there is not to be seen a lion, a tiger, a panther, or any other Asiatic quadruped of a hot climate : not, says he, for want of a land-passage ; but because the cold climate of Tartary, in which such animals cannot subsist, is an effectual bar against them *.

But to give satisfaction upon this subject, more is required than a passage from Kamiskatka to America, whether by land or sea. An inquiry much more decisive is totally overlooked, relative to the people on the two sides of the strait ; particularly, whether they have the same language.

* Our author, with singular candor, admits it as a strong objection to his theory, that there are no rain-deer in Asia. But it is doing no more but justice to so fair a reasoner, to observe, that according to the latest accounts, there are plenty of rain-deer in the country of Kamiskatka, which of all is the nearest to America.

Now by late accounts from Russia we are informed, that there is no affinity between the Kamiskatkan tongue, and that of the Americans on the opposite side of the strait. Whence we may assuredly conclude, that the latter are not a colony of the former.

But further. There are several cogent arguments to evince, that the Americans are not descended from any people in the north of Asia or in the north of Europe. Were they descended from either, Labrador, or the adjacent countries, must have been first peopled. And as savages are remarkably fond of their natal soil, they would have continued there, till compelled by over-population to spread wider for food. But the fact is directly contrary. When America was discovered by the Spaniards, Mexico and Peru were fully peopled; and the other parts less and less, in proportion to their distance from these central countries. Fabry reports, that one may travel one or two hundred leagues north-west from the Mississippi, without seeing a human face, or any vestige of a house. And some French officers say, that they travelled more than a hundred leagues from the delicious country
I watered

watered by the Ohio, through Louisiana, without meeting a single family of savages. The civilization of the Mexicans and Peruvians, as well as their populousness, make it extremely probable that they were the first inhabitants of America. In travelling northward, the people are more and more ignorant and savage: the Esquimaux, the most northern of all, are the most savage. In travelling southward, the Patagonians, the most southern of all, are so stupid as to go naked in a bitter cold region.

I venture still farther; which is, to indulge a conjecture, that America has not been peopled from any part of the old world. The external appearance of the inhabitants, makes this conjecture approach to a certainty; as they are widely different in appearance from any other known people. Excepting the eye-lashes, eyebrows, and hair of the head, which is invariably jet black, there is not a single hair on the body of any American: no appearance of a beard. Another distinguishing mark is their copper colour, uniformly the same in all climates, hot and cold; and differing from the colour of

every other nation. Ulloa remarks, that the Americans of Cape Breton, resemble the Peruvians, in complexion, in manners, and in customs; the only visible difference being, that the former are of a larger stature. A third circumstance no less distinguishing is, that American children are born with down upon the skin, which disappears the eighth or ninth day, and never grows again. Children of the old world are born with skins smooth and polished, and no down appears till puberty.

The Esquimaux are a different race from the rest of the Americans, if we can have any reliance on the most striking characteristic marks. Of all the northern nations, not excepting the Laplanders, they are of the smallest size; few of them exceeding four feet in height. They have a head extremely gross, hands and feet very small. That they are tame and gentle appears from what Ellis says in his account of a voyage, *anno* 1747, for discovering a north-west passage, that they offered their wives to the sailors, with expressions of satisfaction for being able to accommodate them. But above all, their beard and complexion make the strongest evidence

evidence of a distinct race. There were lately at London, two Esquimaux men and their wives; and I have the best authority to affirm, that the men had a beard, thin indeed like that of a Nogayan Tartar; that they were not of a copper colour like the other Americans, but yellow like people in the North of Asia.

It has been lately discovered, that the language of the Esquimaux is the same with that of the Greenlanders. A Danish missionary, who by some years residence in Greenland had acquired the language of that country, made a voyage with Commodore Palliser to Newfoundland *ann.* 1764. Meeting a company of about two hundred Esquimaux, he was agreeably surprised to hear the Greenland tongue. They received him kindly, and drew from him a promise to return the next year. And we are informed by Crantz, in his history of Greenland, that the same Danish missionary visited them the next year, in company with the Rev. Mr Drachart. They agreed, that the difference between the Esquimaux language and that of Greenland, was not greater than between the dialects of North and South Greenland,

land, which differ not so much as the High and Low Dutch. Both nations call themselves *Innuits* or *Karalits*, and call the Europeans *Kablunet*. Their stature, features, manners, dress, tents, darts, and boats, are entirely the same. As the language of Greenland resembles not the language of Finland, Lapland, Norway, Tartary, nor that of the Samoides, it is evident, that neither the *Esquimaux* nor Greenlanders are a colony from any of the countries mentioned. Geographers begin now to conjecture, that Greenland is a part of the continent of North America, without intervention of any sea *.

From the preceding facts it may be concluded with the highest probability, that the continent of America south of the river St. Laurence was not peopled from Asia. Labrador on the north side of that river, is thin of inhabitants; no people having been discovered there but the *Es-*

* The Danes had a settlement in Greenland long before Columbus saw the West Indies. Would it not appear paradoxical to say, that America was discovered by the Danes long before the time of Columbus, and long before they knew that they had made the discovery?

quimaux,

quimaux, who are far from being numerous. As they have plenty of food at home, they never could have had any temptation to send colonies abroad. And there is not the slightest probability, that any other people more remote would, without necessity, wander far from home to people Canada or any country farther south. But we are scarce left to a conjecture. The copper colour of the Canadians, their want of beard, and other characteristical marks above mentioned, demonstrate them to be a race different from the Esquimaux, and different from any people inhabiting a country on the other side of Labrador. These distinguishing marks cannot be owing to the climate, which is the same on both sides of the river St Laurence. I add, that as the copper colour and want of beard continue invariably the same in every variety of climate, hot and cold, moist and dry, they must depend on some invariable cause acting uniformly; which may be a singularity in the race of people (*a*), but cannot proceed from the climate.

If we can rely on the conjectures of an

(*a*) Preliminary Discourse.

eminent

eminent writer (a), America emerged from the sea later than any other part of the known world : and supposing the human race to have been planted in America by the hand of God later than the days of Moses, Adam and Eve might have been the first parents of mankind, *i. e.* of all who at that time existed, without being the first parents of the Americans. The *Terra Australis incognita* is separated from the rest of the world by a wide ocean, which carries a ship round the earth without interruption *. How has that continent been peopled ? There is not the slightest probability, that it ever has been joined to any other land. Here a local creation, if it may be termed so, appears unavoidable ; and if we must admit more than one act of creation, even the appearance of difficulty, from reiteration of acts, totally vanisheth. M. Buffon in his natural history affirms, that not a single American quadruped of a hot climate is

* Late discoveries have annihilated the *Terra Australis incognita*. The argument however remains in force, being equally applicable to many islands scattered at a great distance from the continent in the immense South Sea.

(a) M. Buffon.

found in any other part of the earth: with respect to these we must unavoidably admit a local creation; and nothing seems more natural, than under the same act to comprehend the first parents of the American people.

It is possible, indeed, that a ship with men and women may, by contrary winds, be carried to a very distant shore. But to account thus for the peopling of America, will not be much relished. Mexico and Peru must have been planted before navigation was known in the old world, at least before a ship was brought to such perfection as to bear a long course of bad weather. Will it be thought, that any supposition ought to be embraced, however improbable, rather than admit a separate creation. We are, it is true, much in the dark as to the conduct of creative providence; but every rational conjecture leans to a separate creation. America and the *Terra Australis* must have been planted by the Almighty with a number of animals and vegetables, some of them peculiar to those vast continents: and when such care has been taken about inferior life, can so wild a thought be admitted,

as that man, the noblest work of terrestrial creation, would be left to chance? But it is scarce necessary to insist upon that topic, as the external characters of the Americans above mentioned reject the supposition of their being descended from any people of the old world.

It is highly probable, that the fertile and delicious plains of Peru and Mexico, were the first planted of all the American countries; being more populous at the time of the Spanish invasion, than any other part of that great continent. This conjecture is supported by analogy: we believe that a spot, not central only but extremely fertile, was chosen for the parents of the old world; and there is not in America, a spot more central or more fertile for the parents of the new world, than Mexico or Peru.

Having thus ventured to state what occurred upon the origin of the Americans, without pretending to affirm any thing as certain, we proceed to their progress. The North-American tribes are remarkable with respect to one branch of their history, that, instead of advancing, like other nations, toward the maturity of society and
2 government,

government, they continue to this hour in their original state of hunting and fishing. A case so singular rouses our curiosity; and we wish to be made acquainted with the cause.

It is not the want of animals capable to be domesticated, that obliges them to remain hunters and fishers. The horse, it is true, the sheep, the goat, were imported from Europe; but there are plenty of American quadrupeds no less docile than those mentioned. There is in particular a species of horned cattle peculiar to America, having long wool instead of hair, and an excrescence upon the shoulder like that of the East-India buffalo. These wild cattle multiply exceedingly in the fertile countries which the Mississippi traverses; and Hennepin reports, that the Indians, after killing numbers, take no part away but the tongue, which is reckoned a delicious morsel. These creatures are not extremely wild; and, if taken young, are easily tamed: a calf, when its dam is killed, will follow the hunter, and lick his hand. The wool, the hide, the tallow, would be of great value in the British colonies.

If the shepherd-state be not obstructed in America by want of proper cattle, the only account that can or need be given, is paucity of inhabitants. Consider only the influence of custom, in rivetting men to their local situation and manner of life: once hunters, they will always be hunters, till some cause more potent than custom force them out of that state. Want of food, occasioned by rapid population, brought on the shepherd-state in the old world. That cause has not hitherto existed in North America: the inhabitants, few in number, remain hunters and fishers, because that state affords them a competency of food. I am aware, that the natives have been decreasing in number from the time of the first European settlements. But even at that time, the country was ill peopled: take for example the country above described, stretching northwest from the Mississippi: the Europeans never had any footing there, and yet to this day it is little better than a desert. I give other examples. The Indians who surround the lake Nippisong, from whence the river St Laurence issues, are in whole but five or six thousand; and yet their country

country is of great extent ; they live by hunting and fishing, having bows and arrows, but no fire-arms ; and their cloathing is the skins of beasts : they are seldom, if ever, engaged in war ; have no commerce with any other people, Indian or European, but live as if they had a world to themselves (a). If that country be ill peopled, it is not from scarcity of food ; for the country is extensive, and well stored with every sort of game. On the south and west of the lake *Superior*, the country is level and fruitful all the way to the *Mississippi*, having large plains covered with rank grass, and scarce a tree for hundreds of miles : the inhabitants enjoy the greatest plenty of fish, fowl, deer, &c. ; and yet their numbers are far from being in proportion to their means of subsistence. In short, it is the conjecture of the ablest writers, that in the vast extent of North America, when discovered, there were not as many people, laying aside Mexico, as in the half of Europe.

Paucity of inhabitants explains clearly why the North-American tribes remain

(a) Account of North America by Major Robert Rogers.

hunters and fishers, without advancing to the shepherd-state. But if the foregoing difficulty be removed, another starts up, no less puzzling, viz. By what adverse fate are so rich countries so ill peopled? It is a conjecture of M. Buffon, mentioned above, that America has been planted later than the other parts of this globe. But supposing the fact, it has however not been planted so late as to prevent a great population; witness Mexico and Peru, fully peopled at the era of the Spanish invasion. We must therefore search for another cause; and none occurs but the infecundity of the North-American savages. M. Buffon, a respectable author, and for that reason often quoted, remarks, that the males are feeble in their organs of generation, that they have no ardor for the female sex, and that they have few children; to enforce which remark he adds, that the quadrupeds of America, both native and transplanted, are of a diminutive size, compared with those of the old world. A woman never admits her husband, till the child she is nursing be three years old; and this led Frenchmen to go often astray from their Canadian wives. The case was reported

reported by the priests to their superiors in France : what regulation was made has escaped my memory. Among the males, it is an inviolable law, to abstain from females while they are engaged in a military expedition. This is pregnant evidence of their frigidity ; for among savages the authority of law, or of opinion, seldom prevails over any strong appetite : vain would be the attempt to restrain them from spirituous liquors, tho' much more debilitating. Neither is there any instance, of violence offered by any North-American savage, to European women taken captives in war.

Mexico and Peru, when conquered by the Spaniards, afforded to their numerous inhabitants the necessaries of life in profusion. Cotton was in plenty, more than sufficient for the cloathing needed in warm climates : Indian wheat was universal, and was cultivated without much labour. The natural wants of the inhabitants were thus easily supplied ; and artificial wants had made no progress. But the present state of these countries is very different. The Indians have learned from their conquerors a multitude of artificial wants, good
houses,

houses, variety of food, and rich cloaths ; which must be imported, because they are prohibited from exercising any art or calling except agriculture, which scarce affords them necessaries ; and this obliges a great proportion of them to live single. Even agriculture itself is cramped ; for in most of the provinces there is a prohibition to plant vines or olives. In short, it is believed that the inhabitants are reduced to a fourth part of what they were at the time of the Spanish invasion. The savages also of North America who border on the European settlements, are visibly diminishing. When the English settled in America, the five nations could raise 15,000 fighting men : at present they are not able to raise 2000. Upon the whole, it is computed by able writers, that the present inhabitants of America amount not to a twentieth part of those who existed when that continent was discovered by Columbus. This decay is ascribed to the intemperate use of spirits, and to the small-pox, both of them introduced by the Europeans *.

It

* In all the West-Indian colonies, the slaves continually decrease so as to make frequent recruits from

It is observable, that every sort of plague becomes more virulent by transplantation.

The

from Africa necessary. "This decrease," says the author of a late account of Guiana, "is commonly
"attributed to oppression and hard labour; tho'
"with little reason, as the slaves are much more
"robust, healthy, and vigorous, than their masters.
"The true cause is, the commerce of white men
"with young Negro wenches, who, to support that
"commerce, use every mean to avoid conception,
"and even to procure abortion. By such practices
"they are incapacitated to bear children when they
"settle in marriage with their own countrymen.
"That this is the true cause, will be evident, from
"considering, that in Virginia and Maryland, the
"stock of slaves is kept up without any importa-
"tion; because in these countries commerce with
"Negro women is detested, as infamous and unna-
"tural." The cause here assigned may have some
effect: but there is a stronger cause of depopula-
tion, viz. the culture of sugar, laborious in the field,
and unhealthy in the house by boiling, &c. The
Negroes employ'd in the culture of cotton, coffee,
and ginger, seldom need to be recruited. Add,
that where tobacco and rice are cultivated, the stock
of Negroes is kept up by procreation, without ne-
cessity of recruits. Because there, a certain por-
tion of work is allotted to the negroes in every
plantation; and when that is performed, they are
at liberty to work for themselves. The manage-
ment in Jamaica is very different: no task is there
assigned; and the poor slaves know no end of la-
bour:

The plague commits less ravage in Egypt, its native place, than in any other country. The venereal disease was for many ages more violent and destructive in Europe, than in America where it was first known. The people who sailed with Christopher Columbus, brought it to Spain from Hispaniola. Columbus, with thirty or forty of his sailors, went directly to Barcelona, where the King then was, to render an account of his voyage. All the inhabitants, who at that time tripled the present number, were immediately seized with the venereal disease, which raged so furiously as to threaten destruction to all. The small pox comes under the same observation ; for it has swept away many more in America, than ever it did in Europe. In the 1713, the crew of a Dutch vessel infected the Hottentots with the small pox ; which left scarce a third of the inhabitants. And the same fate befel the Laplanders and Greenlanders. In all appearance, that disease, if it abate not

hour : they are followed all day long by the lower overseers with whips. And hence it is, that a plantation in Jamaica, which employs a hundred slaves, requires an annual recruit of no fewer than seven.

soon of its transplanted virulence, will extirpate the natives of North America ; for they know little of inoculation.

But spirituous liquors are a still more effectual cause of depopulation. The American savages, male and female, are inordinately fond of spirituous liquors ; and savages generally abandon themselves to appetite, without the least control from shame. The noxious effects of intemperance in spirits, are too well known, from fatal experience among ourselves : before the use of gin was prohibited, the populace of London were debilitated by it to a degree of losing, in a great measure, the power of procreation. Lucky it is for the human species, that the invention of savages never reached the production of gin ; for spirits, in that early period, would have left not one person alive, not a single Noah to restore the race of men : in order to accomplish the plan of Providence, creation must have been renewed oftner than once *.

In

* Charlevoix says, that an Indian of Canada will give all he is worth for a glass of brandy. And he paints thus the effect of drunkenness upon them.

In the temperate climates of the old world, there is great uniformity in the gradual progress of men from the savage state to the highest civilization; beginning with hunting and fishing, advancing to flocks and herds, and then to agriculture and commerce. One will be much disappointed, if he expect the same progress in America. Among the northern tribes, there is nothing that resembles the shepherd-state: they continue hunters and fishers as originally; because there is no cause so potent as to force them from that state to become shepherds. So far clear. But there is another fact of which we have no example in the old world, that seems not so easily explained: these people, without passing through the shepherd-state, have advanced to some degree of agriculture. Before the seventeenth century, the Iroquois or five nations had villages, and cultivated Indian corn: the Cherokees have many small towns; they raise corn

“ Even in the streets of Montreal are seen the most
“ shocking spectacles of ebriety; husbands, wives,
“ fathers, mothers, brothers, and sisters, seizing
“ one another by the throat, and tearing one another
“ with their teeth, like so many enraged
“ wolves.”

in

in abundance, and enclose their fields : they breed poultry, and have orchards of peach-trees. The Chickesaws and Creek Indians live pretty much in the same manner. The Apalachites sow and reap in common ; and put up the corn in granaries, to be distributed among individuals when they want food. The Hurons raise great quantities of corn, not only for their own use, but for commerce. Many of these nations, particularly the Cherokees, have of late got horses, swine, and tame cattle ; an improvement borrowed from the Europeans. But corn is of an earlier date : when Sir Richard Greenville took possession of Virginia in the reign of Queen Elizabeth, the natives had corn ; and Hennepin assures us, that the nations bordering on the Mississippi had corn long before they were visited by any European. Husbandry, it is true, is among those people still in its infancy ; being left to the women, who sow, who reap, who store up in public granaries, and who distribute as need requires. The inhabitants of Guiana in South America, continue to this day hunters and fishers. But tho' they have neither flocks nor herds, they have some

U 2 husbandry ;

husbandry ; for the women plant cassava, yams, and plantains. They make a liquor like our ale, termed *piworee*, which they drink with their food. And tho' they are extremely fond of that liquor, their indolence makes them often neglect to provide against the want of it. To a people having a violent propensity to intemperance, as all savages have, this improvidence is a blessing ; for otherwise they would wallow in perpetual drunkenness. They are by no means singular ; for unconcern about futurity is the characteristic of all savages : to forego an immediate for a distant enjoyment, can only be suggested by cultivated reason. When the Canary islands were first visited by Europeans, which was in the fourteenth century, the inhabitants had corn ; for which the ground was prepared in the following manner. They had a wooden instrument, not unlike a hoe, with a spur or tooth at the end, on which was fixed a goat's horn. With this instrument the ground was stirred ; and if rain came not in its proper season, water was brought by canals from the rivulets. It was the women's province to reap the corn : they took only the ears ;
which

which they threshed with sticks, or beat with their feet, and then winnowed in their hands. Husbandry probably will remain in that state among American savages; for as they are decreasing daily, they can have no difficulty about food. The fact however is singular, of a people using corn before tame cattle: there must be a cause, which on better acquaintance with that people will probably be discovered.

America is full of political wonders. At the time of the Spanish invasion, the Mexicans and Peruvians had made great advances toward the perfection of society; while the northern tribes, separated from them by distance only, were only hunters and fishers, and continue so to this day. To explain the difference, appears difficult. It is still more difficult to explain, why the Mexicans and Peruvians, inhabitants of the torrid zone, were highly polished in the arts of society and government; considering that in the old world, the inhabitants of the torrid zone are for the most part little better than savages. We are not sufficiently acquainted with the natural history of America, nor with that of
its

its people, to attempt an explanation of these wonders : it is however part of our task, to state the progress of society among the Mexicans and Peruvians ; which cannot fail to amuse the reader, as he will find these two nations differing essentially from the North-American tribes, in every article of manners, government, and police.

When the Spaniards invaded America, the Mexicans were skilful in agriculture. Maize was their chief grain, which by good culture produced great plenty, even in the mountainous country of Tlascalla. They had gardening and botany, as well as agriculture : a physic-garden belonging to the Emperor was open to every one for gathering medicinal plants.

The art of cookery was far advanced among that people. Montezuma's table was for ordinary covered with 200 dishes, many of them exquisitely dressed in the opinion even of the Spaniards. They used salt, which was made with the sun.

The women were dextrous at spinning ; and manufactures of cotton and hair abounded every where.

The populousness of Mexico and Peru
afford

afford irrefragable evidence, that the arts of peace were there carried to a great height. The city of Mexico contained 60,000 families *; and Montezuma had thirty vassals who could bring into the field, each of them, 100,000 fighting men. Tlascalla, a neighbouring republic governed by a senate, was so populous as to be almost a match for the Emperor of Mexico.

The public edifices in the city of Mexico and houses of the nobility, were of stone, and well built. The royal palace had thirty gates opening to as many streets. The principal front was of jasper, black, red, and white, well polished. Three squares, built and adorned like the front, led to Montezuma's apartment, having large rooms, floors covered with mats of different kinds, walls hung with a mixture of cotton-cloth and rabbit-furs; the innermost room adorned with hangings of

* We cannot altogether rely on what is reported of this ancient empire with respect to numbers. The city of Mexico, tho' considerably enlarged since the Spanish conquest, doth not at present contain more than 60,000 souls, including 20,000 Negroes and Mulattoes.

feathers,

feathers, beautified with various figures in lively colours. In that building, large ceilings were formed so artificially without nails, as to make the planks sustain each other. Water was brought into the city of Mexico, from a mountain at a league's distance.

Gold and silver were in so high esteem, that vessels made of these metals were permitted to none but to the Emperor. Considering the value put upon gold and silver, the want of current coin would argue great dulness in that nation, if instances did not daily occur of improvements, after being carried to a considerable height, stopping short at the very threshold of perfection. The want of current coin made fairs the more necessary, which were carried on with the most perfect regularity: judges on the spot decided mercantile differences; and inferior officers, making constant circuits, preserved peace and order. The abundance and variety of the commodities brought to market, and the order preserved by such multitudes, amazed the Spaniards; a spectacle deserving admiration, as a testimony of the gran-

dear and good government of that extensive empire.

The fine arts were not unknown in Mexico. Their goldsmiths were excellent workmen, particularly in moulding gold and silver into the form of animals. Their painters made landscapes and other imitations of nature, with feathers so artfully mixed as to bestow both life and colouring; of which sort of work, there were instances no less extraordinary for patience than for skill. Their drinking-cups were of the finest earth exquisitely made, differing from each other in colour, and even in smell. Of the same materials, they made great variety of vessels both for use and ornament.

They were not ignorant either of music or of poetry; and one of their capital amusements was songs set to music relating the achievements of their kings and ancestors.

With such a progress both in the useful and fine arts, is it not surprising, that tho' they had measures, they knew nothing of weights?

As to the art of writing, it was no farther advanced than the using figures com-

posed of painted feathers, by which they made a shift to communicate some simple thoughts ; and in that manner was Montezuma informed of the Spanish invasion.

There was great ingenuity shewn in regulating the calendar : the Mexican year was divided into 365 days ; and into 18 months, containing 20 days each, which made 360 ; the remaining five intercalary days were added at the end of the year, for making it correspond to the course of the sun. They religiously employ'd these five days upon diversions, being of opinion that they were appropriated to that end by their ancestors.

Murder, theft, and corruption in officers of state, were capital crimes. Adultery also was capital ; for female chastity was in high estimation. At the same time, consent was deemed a sufficient cause of divorce, the law leaving it to the parties concerned, who ought to be the best judges. In case of a divorce, the father took care of the male children, leaving the female children with the mother. But to prevent rash separations, it was capital for them to unite again.

It may be gathered from what has been
said,

said, that there was a distinction of rank among the Mexicans. So strictly was it observed, as to be display'd even in their buildings: the city of Mexico was divided into two parts, one appropriated to the Emperor and nobility, and one left to plebeians.

Education of children was an important article in the Mexican police. Public schools were allotted for plebeian children; and colleges well endowed for the sons of the nobility, where they continued till they were fit for business. The masters were considered as officers of state; not without reason, as their office was to qualify young men for serving their king and country. Such of the young nobles as made choice of a military life, were sent to the army, and made to suffer great hardships before they could be enlisted. They had indeed a powerful motive for perseverance, the most honourable of all employments being that of a soldier. Young women of quality were educated with no less care, by proper matrons chosen with the utmost circumspection.

As hereditary nobility and an extensive empire, lead both of them to monarchy,

the government of Mexico was monarchical; and as the progress of monarchy is from being elective to be hereditary, Mexico had advanced no farther than to be an elective monarchy, of which Montezuma was the eleventh king. And it was an example of an elective monarchy that approaches the nearest to hereditary; for the power of election, as well as the privilege of being elected, were confined to the princes of the blood-royal. As a talent for war was chiefly regarded in choosing a successor to the throne, the Mexican kings always commanded their own armies. The Emperor-elect, before his coronation, was obliged to make some conquest, or perform some warlike exploit; a custom that supported the military spirit, and enlarged the kingdom. From every king was exacted a coronation-oath, to adhere to the religion of his ancestors, to maintain the laws and customs of the empire, and to be a father to his people.

Matters of government were distributed among different boards with great propriety. The management of the royal patrimony was allotted to one board; appeals from inferior tribunals, to another; the
levying

levying of troops and the providing of magazines, to a third : affairs of supreme importance were reserved to a council of state, held commonly in the King's presence. These boards, all of them, were composed of men experienced in the arts of war and of peace : the council of state was composed of those who elected the Emperor.

Concerning the patrimony of the crown, mines of gold and silver belonged to the Emperor ; and the duty on salt brought in a great revenue. But the capital duty was a third of the land-rents, the estates of the nobles excepted ; upon whom no tribute was imposed, but to serve in the army with a number of their vassals, and to guard the Emperor's person. Goods manufactured and sold were subjected to a duty ; which was not prejudicial to their manufactures, because there was no rival nation within reach.

Montezuma introduced a multitude of ceremonies into his court, tending to inspire veneration for his person ; an excellent artifice in rude times, of however little significance among nations enlightened and rational. Veneration and humility

lity were so much the tone of the court, that it was even thought indecent in the Mexican lords, to appear before the King in their richest habits. Vessels of gold and silver were appropriated to his table, and not permitted even to the princes of the blood. The table-cloths and napkins, made of the finest cotton, with the earthen ware, never made a second appearance at the Emperor's table, but were distributed among the servants.

In war, their offensive weapons were bows and arrows; and as iron was not known in America, their arrows were headed with bones sharpened at the point. They used also darts and long wooden swords, in which were fixed sharp flints; and men of more than ordinary strength fought with clubs. They beside had slingers, who threw stones with great force and dexterity. Their defensive arms, used only by commanders and persons of distinction, were a coat of quilted cotton, a sort of breast-plate, and a shield of wood or tortoise-shell, adorned with plates of such metal as they could procure. The private men fought naked; their faces and bodies being deformed with paint, in
order

order to strike terror. They had warlike instruments of music, such as sea-shells, flutes made of large canes, and a sort of drum made of the trunk of a tree hollow'd. Their battalions consisted of great numbers crouded together, without even the appearance of order. They attacked with terrible outcries in order to intimidate the enemy ; a practice prompted by nature, and formerly used by many nations. It was not despised even by the Romans ; for Cato the elder was wont to say, that he had obtained more victories by the throats of his soldiers, than by their swords ; and Cæsar applauds his own soldiers, above those of Pompey, for their warlike shouts. Eagerness to engage is vented in loud cries : and the effects are excellent : they redouble the ardor of those who attack, and strike terror into the enemy.

Their armies were formed with ease : the princes of the empire, with the cacics or governors of provinces, were obliged to repair to the general rendezvous, each with his quota of men.

Their fortifications were trunks of large trees, fixed in the ground like palisades, leaving

leaving no intervals but what were barely sufficient for discharging their arrows upon the enemy.

Military orders were instituted, with peculiar habits as marks of distinction and honour; and each cavalier bore the device of his order, painted upon his robe, or fixed to it. Montezuma founded a new order of knighthood, into which princes only were admitted, or nobles descended from the royal stock; and as a token of its superiority, he became one of its members. The knights of that order had part of their hair bound with a red ribbon, to which a tassel was fixed hanging down to the shoulder. Every new exploit was honoured with an additional tassel; which made the knights with ardor embrace every opportunity to signalize themselves. As nothing can be better contrived than such a regulation for supporting a military spirit, the Mexicans would have been invincible had they understood the order of battle: for want of which that potent empire fell a prey to a handful of strangers. I differ from those who ascribe that event to the fire-arms of the Spaniards, and to their horses. These could not be more terrible

to the Mexicans, than elephants were at first to the Romans : but familiarity with these unwieldy animals, restored to the Romans their wonted courage ; and the Mexicans probably would have behaved like the Romans, had they equalled the Romans in the art of war.

When that illustrious people, by their own genius without borrowing from others, had made such proficiency in the arts of peace, as well as of war ; is it not strange, that with respect to religion they were no better than savages ? They not only practised human sacrifices, but dressed and ate the flesh of those that were sacrificed. Their great temple was contrived to raise horror : upon the walls were crouded the figures of noxious serpents : the heads of persons sacrificed were stuck up in different places, and carefully renewed when wasted by time. There were eight temples in the city, nearly of the same architecture ; 2000 of a smaller size, dedicated to different idols ; scarce a street without a tutelar deity ; nor a calamity that had not an altar, to which the distressed might have recourse for a remedy. Unparalleled ignorance and stupidity,

VOL. III. Y obliged

obliged every Emperor, at his coronation, to swear, that there should be no unseasonable rains, no overflowing of rivers, no fields affected with sterility, nor any man hurt with the bad influences of the sun. In short, it was a slavish religion, built upon fear, not love. At the same time, they believed the immortality of the soul, and rewards and punishments in a future state; which made them bury with their dead, quantities of gold and silver for defraying the expence of their journey; and also made them put to death some of their servants to attend them. Women sometimes, actuated with the same belief, were authors of their own death, in order to accompany their husbands.

The author we chiefly rely on for an account of Peru is Garcilasso de la Vega: tho' he may be justly suspected of partiality; for, being of the Inca race, he bestows on the Peruvian government, improvements of later times. The articles that appear the least suspicious are what follow.

The principle of the Peruvian constitution seems to have been an Agrarian law
of

of the strictest kind. To the sovereign was first allotted a large proportion of land, for defraying the expences of government; and the remainder was divided among his subjects, in proportion to the number of each family. These portions were not alienable: the sovereign was held proprietor of the whole, as in the feudal system; and from time to time the distribution was varied according to the circumstances of families. This Agrarian law contributed undoubtedly to the populousness of the kingdom of Peru.

It is a sure sign of improved agriculture, that aqueducts were made by the Peruvians for watering their land. Their plough was of wood, a yard long, flat before, round behind, and pointed at the end for piercing the ground. Agriculture seems to have been carried on by united labour: lands appropriated for maintaining the poor were first ploughed; next the portion allotted to soldiers performing duty in the field; then every man separately ploughed his own field; after which he assisted his neighbour: they proceeded to the portion of the curaca or lord; and lastly to the King's portion. In the month

of March they reaped their maize, and celebrated the harvest with joy and feasting.

There being no artist nor manufacturer by profession, individuals were taught to do every thing for themselves. Every one knew how to plough and manure the land: every one was a carpenter, a mason, a shoemaker, a weaver, &c.; and the women were the most ingenious and diligent of all. Blas Valera mentions a law, named *the law of brotherhood*, which, without the prospect of reward, obliged them to be mutually aiding and assisting in ploughing, sowing, and reaping, in building their houses, and in every sort of occupation.

As the art was unknown of melting down metals by means of bellows, long copper pipes were contrived, contracted at the end next the fire, that the breath might act the more forcibly on it; and they used ten or twelve of these pipes together, when they wanted a very hot fire. Having no iron, their hatchets and pick-axes were of copper; they had neither saw nor augre, nor any instrument that requires iron: ignorant of the use of nails, they tied their timber with cords of hemp. The tool
they

they had for cutting stone, was a sharp flint ; and with that tool they shaped the stone by continual rubbing, more than by cutting. Having no engines for raising stones, they did all by strength of arm. These defects notwithstanding, they erected great edifices ; witness the fortress of Cusco, a stupenduous fabric. It passes all understanding, by what means the stones, or rather great rocks, employ'd in that building, were brought from the quarry. One of these stones, measured by Acosta, was thirty feet in length, eighteen in breadth, and six in thickness.

Having neither scissars nor needles of metal, they used a certain long thorn for a needle. The mirrors used by ladies of quality were of burnished copper : but such implements of dress were reckoned too effeminate for men.

With respect to music, they had an instrument of hollow canes glew'd together, the notes of which were like those of an organ. They had love-songs accompanied with a pipe ; and war-songs, which were their festival entertainment. They composed and acted comedies and tragedies. The art of writing was unknown : but
filken

filken threads, with knots cast upon them of divers colours, enabled them to keep exact accounts, and to sum them up with a readiness that would have rivalled an expert European arithmetician. They had also attained to as much geometry as to measure their fields.

In war, their offensive arms were the bow and arrow, lance, dart, club, and bill. Their defensive arms, were the helmet and target. The army was provided from the King's stores, and no burden was laid on the people.

In philosophy, they had made no progress. An eclipse of the moon was attributed to her being sick; and they fancied the milky way to be a ewe giving suck to a lamb. With regard to the setting sun, they said, that he was a good swimmer, and that he pierced through the waves, to rise next morning in the east. But such ignorance is not wonderful; for no branch of science can make a progress without writing.

The people were divided into small bodies of ten families each: every division had a head, and a register was kept of the whole; a branch of public police, that
very

very much resembles the English decennaries.

They made but two meals, one between eight and nine in the morning, the other before sunset. Idleness was punished with infamy: even children were employ'd according to their capacity. Public visitors or monitors were appointed, having access to every house, for inspecting the manners of the inhabitants; who were rewarded or punished according to their behaviour. Moderation and industry were so effectually enforc'd by this article of police, that few were reduced to indigence; and these got their food and cloathing out of the King's stores.

With respect to their laws and customs, children were bound to serve their parents until the age of twenty-five; and marriage contracted before that time, without consent of parents, was null. Polygamy was prohibited, and persons were confined to marry within their own tribe. The tradition, that the Inca family were children of the sun, introduced incest among them; for it was a matter of religion to preserve their divine blood pure, without mixture.

It

It was the chief article of the Peruvian creed, upon which every other article of their religion depended, that the Inca family were children of their great god the sun, and sent by him to spread his worship and his laws among them. Nothing could have a greater influence upon an ignorant and credulous people, than such a doctrine. The sanctity of the Inca family was so deeply rooted in the hearts of the Peruvians, that no person of that family was thought capable of committing a crime. Such blind veneration for a family, makes it probable, that the government of Peru under the Incas had not subsisted many years; for a government founded upon deceit and superstition, cannot long subsist in vigour. However that be, such belief of the origin of the Incas, is evidence of great virtue and moderation in that family; for any gross act of tyranny or injustice, would have opened the eyes of the people to see their error. Moderation in the sovereign and obedience without reserve in the subjects, cannot fail to produce a government mild and gentle; which was verified in that of Peru; so mild and gentle, that to manure

and cultivate the lands of the Inca and to lay up the produce in storehouses, were the only burdens imposed upon the people, if it was not sometimes to make cloaths and weapons for the army. At the same time, their kings were so revered, that these articles of labour were performed with affection and alacrity.

The government was equally gentle with regard to punishments. Indeed very few crimes were committed, being considered as a sort of rebellion against their great god the sun. The only crime that seems to have been punished with severity, is the marauding of soldiers; for death was inflicted, however inconsiderable the damage.

In this empire, there appears to have been the most perfect union between law and religion; which could not fail to produce obedience, order, and tranquillity, among that people, tho' extremely numerous. The Inca family was fam'd for moderation: they made conquests in order to civilize their neighbours; and as they seldom if ever transgressed the bounds of morality, no other art was necessary to preserve the government entire, but to

keep the people ignorant of true religion. They had virgins dedicated to the sun, who, like the vestal virgins in Rome, were under a vow of perpetual chastity.

This subject shall be concluded with some slight observations on the two governments I have been describing. Comparing them together, the Mexican government seems to have been supported by arms; that of Peru by religion.

The kings of Peru were hereditary and absolute: those of Mexico elective. In contradiction however to political principles, the government of Peru was by far the milder. It is mentioned above, that the electors of the Mexican kings were hereditary princes; and the same electors composed the great council of state. Montesquieu therefore has been misinformed when he terms this a despotic monarchy (a): a monarchy can never be despotic, where the sovereign is limited by a great council, the members of which are independent of him. As little reason has he to term Peru despotic. An absolute monarchy it was, but the farthest in the world from being despotic; on the con-

(a) L'Esprit des loix, liv. 17. ch. 2.

trary, we find not in history any government so well contrived for the good of the people. An Agrarian law, firmly rooted, was a firm bar against such inequality of rank and riches, as lead to luxury and dissolution of manners : a commonwealth is naturally the result of such a constitution ; but in Peru it was prevented by a theocratical government under a family sent from heaven to make them happy. This wild opinion, supported by ignorance and superstition, proved an effectual bar against tyranny in the monarch ; a most exemplary conduct on his part being necessary for supporting the opinion of his divinity. Upon the whole, comprehending king and subject, there perhaps never existed more virtue in any other government, whether monarchical or republican.

In Peru there are traces of some distinction of ranks, arising probably from office merely, which, as in France, was a bulwark to the monarch against the peasants. The great superiority of the Peruvian Incas, as demi-gods, did not admit a hereditary nobility.

With respect to the progress of arts and
Z 2 manufactures,

manufactures, the two nations differed widely: in Mexico, arts and manufactures were carried to a surprising height, considering the tools they had to work with: in Peru, they had made no progress; every man, as among mere savages, providing the necessaries of life for himself. As the world goes at present, our multiplied wants require such numbers, that not above one of a hundred can be spared for war. In ancient times, when these wants were few and not much enlarged beyond nature, it is computed that an eighth part could be spared for war: and hence the numerous armies we read of in the history of ancient nations. The Peruvians had it in their power to go still farther: it was possible to arm the whole males capable of service: leaving the women to supply the few necessaries that might be wanted during a short campaign; and accordingly we find that the Incas were great conquerors.

The religion of the Peruvians, considered in a political light, was excellent. The veneration they paid their sovereign upon a false religious principle, was their only superstition; and that superstition contributed

buted greatly to improve their morals and their manners : on the other hand, the religion of Mexico was execrable.

Upon the whole, there never was a country destitute of iron, where arts seem to have been carried higher than in Mexico : and, bating their religion, there never was a country destitute of writing, where government seems to have been more perfect. I except not the government of Peru, which, not being founded on political principles, but on superstition, might be more mild, but was far from being so solidly founded.

S K E T C H E S

O F T H E

HISTORY OF MAN.

B O O K III.

Progress of SCIENCES.

P R E F A C E.

*M*orality, theology, and the art of reasoning, are three great branches of a learned education; and justly held to be so, being our only sure guides in passing through the intricate paths of life. They are indeed not essential to those termed men of the world: the most profound philosopher makes but an insipid figure in fashionable company; would be somewhat ridiculous at a court-ball; and an absolute absurdity among the gamesters at Arthur's,

thur's, or jockeys at Newmarket. But, these cogent objections notwithstanding, I venture to pronounce such studies to be not altogether unsuitable to a gentleman. Man is a creature full of curiosity; and to gratify that appetite, many roam through the world, submitting to heat and cold, nay to hunger and thirst, without a sigh. Could indeed that troublesome guest be expelled, we might hug ourselves in ignorance; and, like true men of the world, undervalue knowledge that cannot procure money, nor a new sensual pleasure. But, alas! the expulsion is not in the power of every one; and those who must give vent to their curiosity, will naturally employ it upon studies that make them good members of society, and endear them to every person of virtue.

And were we even men of the world in such perfection, as to regard nothing but our own interest; yet does not ignorance lay us open to the crafty and designing? and does not the art of reasoning guard many an honest man from being misled by subtle sophisms? With respect to right and wrong, not even passion is more dangerous than error. And as to religion, better it were to settle in a conviction that there is no God, than to be in

a state of wavering and fluctuation ; sometimes indulging every loose desire, as if we were not accountable beings ; and sometimes yielding to superstitious fears, as if there were no god but the devil. To a well-disposed mind, the existence of a supreme benevolent Deity, appears highly probable : and if by the study of theology that probability be improved into a certainty, the conviction of a supreme Deity who rules with equity and mildness, will be a source of constant enjoyment, which I boldly set above the titillating pleasures of external sense. Possibly there may be less present amusement in abstract studies, than in newspapers, in party-pamphlets, or in Hoyl upon Whist : but let us for a moment anticipate futurity, and imagine that we are reviewing past transactions, — how pleasant the retrospect of those who have maintained the dignity of their nature, and employ'd their talents to the best purposes !

Contradictory opinions that have influence on practice, will be regretted by every person of a sound heart ; and as erroneous opinions are commonly the result of imperfect education, I would gladly hope, that a remedy is not altogether out of reach. At the revival of arts and sciences, the learned languages were

were our sole study, because in them were locked up all the treasures of useful knowledge. This study has long ago ceased to be the chief object of education ; and yet the original plan is handed down to us with very little variation. Wishing to contribute to a more perfect system of education, I present to the public the following sketches. The books that have been published on morality, theology, and the art of reasoning, are not eminent either for simplicity, or for perspicuity. To introduce these into the subjects mentioned, is my aim ; with what success, is with deference submitted to the judgement of others. The historical part, hitherto much neglected, is necessary as a branch of my general plan ; and I am hopeful, that, beside instruction, it will contribute to recreation, which, in abstract studies, is no less necessary than pleasant.

S K E T C H . I.

Principles and Progress of Reason.

S E C T I O N . I.

Principles of Reason.

EVery affirmation, whatever be the subject, is termed a *proposition*.

Truth and error are qualities of propositions. A proposition that says a thing is what it is in reality, is termed a *true proposition*. A proposition that says a thing is what it is not in reality, is termed an *erroneous proposition*.

Truth is so essential in conducting affairs, that man would be a disjointed being were it not agreeable to him. Truth accordingly is agreeable to every human being, and falsehood or error disagreeable.

The

The pursuit of truth is no less pleasant than the pursuit of any other good *.

Our knowledge of what is agreeable and disagreeable in objects is derived from the sense of beauty, handled in Elements of Criticism. Our knowledge of right and wrong in actions, is derived from the moral sense, to be handled in the sketch immediately following. Our knowledge of truth and error is derived from various sources.

Our external senses are one source of knowledge: they lay open to us external subjects, their qualities, their actions, with events produced by these actions. The internal senses are another source of knowledge: they lay open to us things passing in the mind; thinking, for example, deliberating, inclining, resolving, willing, consenting, and other acts; and they also lay open to us our emotions and passions. There is a sense by which we perceive the truth of many propositions; such as, That every thing which begins

* It has been wisely observed, that truth is the same to the understanding that music is to the ear, or beauty to the eye.

to exist must have a cause; That every effect adapted to some end or purpose, proceeds from a designing cause; and, That every effect adapted to a good end or purpose, proceeds from a designing and benevolent cause. A multitude of axioms in every science, particularly in mathematics, are equally perceived to be true. By a peculiar sense, of which afterward, we know that there is a Deity. There is a sense by which we know, that the external signs of passion are the same in all men; that animals of the same external appearance, are of the same species; and that animals of the same species, have the same properties (*a*). There is a sense that dives into futurity: we know that the sun will rise to-morrow; that the earth will perform its wonted course round the sun; that winter and summer will follow each other in succession; that a stone dropt from the hand will fall to the ground; and a thousand other such propositions.

There are many propositions, the truth of which is not so apparent: a process of

(*a*) Preliminary Discourse.

reasoning

reasoning is necessary, of which afterward.

Human testimony is another source of knowledge. So framed we are by nature, as to rely on human testimony; by which we are informed of beings, attributes, and events, that never came under any of our senses.

The knowledge that is derived from the sources mentioned, is of different kinds. In some cases, our knowledge includes absolute certainty, and produces the highest degree of conviction: in other cases, probability comes in place of certainty, and the conviction is inferior in degree. Knowledge of the latter kind is distinguished into belief, which concerns facts; and opinion, which concerns relations; and other things that fall not under the denomination of facts. In contradistinction to opinion and belief, that sort of knowledge which includes absolute certainty and produces the highest degree of conviction, retains its proper name. To explain what is here said, I enter into particulars.

The sense of seeing, with very few exceptions, affords knowledge properly so termed;

termed: it is not in our power to doubt of the existence of a person we see, touch, and converse with. When such is our constitution, it is a vain attempt to call in question the authority of our sense of seeing, as some writers pretend to do. No one ever called in question the existence of internal actions and passions, laid open to us by internal sense; and there is as little ground for doubting of what we see. The sense of seeing, it is true, is not always correct: through different mediums the same object is seen differently: to a jaundic'd eye every thing appears yellow; and to one intoxicated with liquor, two candles sometimes appear four. But we are never left without a remedy in such a case: it is the province of the reasoning faculty, to correct every error of that kind.

An object of sight recalled to mind by the power of memory, is termed an *idea* or secondary perception. An original perception, as said above, affords knowledge in its proper sense; but a secondary perception affords belief only. And Nature in this, as in all other instances, is faithful to truth; for it is evident, that we cannot

cannot be so certain of the existence of an object in its absence, as when present.

With respect to many abstract propositions, of which instances are above given, we have an absolute certainty and conviction of their truth, derived to us from various senses. We can, for example, entertain as little doubt that every thing which begins to exist must have a cause, as that the sun is in the firmament ; and as little doubt that he will rise to-morrow, as that he is now set. There are many other propositions, the truth of which is probable only, not absolutely certain ; as, for example, that winter will be cold and summer warm. That natural operations are performed in the simplest manner, is an axiom of natural philosophy : it may be probable, but is far from being certain *.

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* I have given this proposition a place, because it is assumed as an axiom by all writers on natural philosophy. And yet there appears some room for doubting, whether our conviction of it do not proceed from a bias in our nature, rather than from an original sense. Our taste for simplicity, which undoubtedly is natural, renders simple operations more agreeable than what are complex, and consequently makes them appear more natural. It deserves

In every one of the instances given, conviction arises from a single act of perception: for which reason, knowledge acquired by means of that perception, not only knowledge in its proper sense but also opinion and belief, are termed *intuitive knowledge*. But there are many things, the knowledge of which is not obtained with so much facility. Propositions for the most part require a process or operation in the mind, termed *reasoning*; leading, by certain intermediate steps, to the proposition that is to be demonstrated or made evident; which, in opposition to intuitive knowledge, is termed *discursive knowledge*. This process or operation must be explained, in order to understand the nature of reasoning. And as reasoning is mostly employ'd in discovering relations, I shall draw my examples from them. Every proposition concerning relations, is an affirmation of a certain relation between two subjects. If the relation affirmed appear not intuitively, we must search

serves a most serious discussion, whether the operations of nature be always carried on with the greatest simplicity, or whether we be not misled by our taste for simplicity to be of that opinion.

for a third subject, intuitively connected with each of the others by the relation affirmed: and if such a subject be found, the proposition is demonstrated; for it is intuitively certain, that two subjects connected with a third by any particular relation, must be connected together by the same relation. The longest chain of reasoning may be linked together in this manner. Running over such a chain, every one of the subjects must appear intuitively to be connected with that immediately preceding, and with that immediately subsequent, by the relation affirmed in the proposition; and from the whole united, the proposition, as above mentioned, must appear intuitively certain. The last step of the process is termed a *conclusion*, being the last or concluding perception.

No other reasoning affords so clear a notion of the foregoing process, as that which is mathematical. Equality is the only mathematical relation; and comparison therefore is the only means by which mathematical propositions are ascertained. To that science belong a number of intuitive propositions, termed *axioms*, which

are all founded on equality. For example: Divide two equal lines, each of them, into a thousand equal parts, a single part of the one line must be equal to a single part of the other. Second: Take ten of these parts from the one line, and as many from the other, and the remaining parts must be equal; which is more shortly expressed thus: From two equal lines take equal parts, and the remainders will be equal; or add equal parts, and the sums will be equal. Third: If two things be, in the same respect, equal to a third, the one is equal to the other in the same respect. I proceed to show the use of these axioms. Two things may be equal without being intuitively so; which is the case of the equality between the three angles of a triangle and two right angles. To demonstrate that truth, it is necessary to search for some other angles that intuitively are equal to both. If this property cannot be discovered in any one set of angles, we must go more leisurely to work, and try to find angles that are equal to the three angles of a triangle. These being discovered, we next try to find other angles equal to the angles now discovered;

vered ; and so on in the comparison, till at last we discover a set of angles, equal not only to those thus introduced, but also to two right angles. We thus connect the two parts of the original proposition, by a number of intermediate equalities ; and by that means perceive, that these two parts are equal among themselves ; it being an intuitive proposition, as mentioned above, That two things are equal, each of which, in the same respect, is equal to a third.

I proceed to a different example, which concerns the relation between cause and effect. The proposition to be demonstrated is, “ That there exists a good and intelligent Being, who is the cause of all the wise and benevolent effects that are produced in the government of this world.” That there are such effects, is in the present example the fundamental proposition ; which is taken for granted, because it is verified by experience. In order to discover the cause of these effects, I begin with an intuitive proposition mentioned above, “ That every effect adapted to a good end or purpose, proceeds from a designing and benevolent cause.”

The next step is, to examine whether man can be the cause: he is provided indeed with some share of wisdom and benevolence; but the effects mentioned are far above his power, and no less above his wisdom. Neither can this earth be the cause, nor the sun, the moon, the stars; for, far from being wise and benevolent, they are not even sensible. If these be excluded, we are unavoidably led to an invisible being, endowed with boundless power, goodness, and intelligence; and that invisible being is termed *God*.

Reasoning requires two mental powers, namely, the power of invention, and the power of perceiving relations. By the former are discovered intermediate propositions, equally related to the fundamental proposition and to the conclusion: by the latter we perceive, that the different links which compose the chain of reasoning, are all connected together by the same relation.

We can reason about matters of opinion and belief, as well as about matters of knowledge properly so termed. Hence reasoning is distinguished into two kinds; demonstrative, and probable. Demon-
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strative reasoning is also of two kinds : in the first, the conclusion is drawn from the nature and inherent properties of the subject : in the other, the conclusion is drawn from some principle, of which we are certain by intuition. With respect to the first, we have no such knowledge of the nature or inherent properties of any being, material or immaterial, as to draw conclusions from it with certainty. I except not even figure considered as a quality of matter, tho' it is the object of mathematical reasoning. As we have no standard for determining with precision the figure of any portion of matter, we cannot with precision reason upon it: what appears to us a straight line may be a curve, and what appears a rectilinear angle may be curvilinear. How then comes mathematical reasoning to be demonstrative? This question may appear at first sight puzzling; and I know not that it has any where been distinctly explained. Perhaps what follows may be satisfactory.

The subjects of arithmetical reasoning are numbers. The subjects of mathematical reasoning are figures. But what figures? Not such as I see; but such as I
form

form an idea of, abstracting from every imperfection. I explain myself. There is a power in man to form images of things that never existed; a golden mountain, for example, or a river running upward. This power operates upon figures: there is perhaps no figure existing the sides of which are straight lines; but it is easy to form an idea of a line that has no waving or crookedness, and it is easy to form an idea of a figure bounded by such lines. Such ideal figures are the subjects of mathematical reasoning; and these being perfectly clear and distinct, are proper subjects for demonstrative reasoning of the first kind. Mathematical reasoning however is not merely a mental entertainment: it is of real use in life, by directing us to operate upon matter. There possibly may not be found any where a perfect globe, to answer the idea we form of that figure: but a globe may be made so near perfection, as to have nearly the properties of a perfect globe. In a word, tho' ideas are, properly speaking, the subject of mathematical evidence; yet the end and purpose of that evidence is, to direct us with respect to figures as they really exist; and the

the nearer any real figure approaches to its ideal perfection, with the greater accuracy will the mathematical truth be applicable.

The component parts of figures, viz. lines and angles, are extremely simple, requiring no definition. Place before a child a crooked line, and one that has no appearance of being crooked : call the former a *crooked line*, the latter a *straight line* ; and the child will use these terms familiarly, without hazard of a mistake. Draw a perpendicular upon paper : let the child advert, that the upward line leans neither to the right nor the left, and for that reason is termed a *perpendicular* : the child will apply that term familiarly to a tree, to the wall of a house, or to any other perpendicular. In the same manner, place before the child two lines diverging from each other, and two that have no appearance of diverging : call the latter *parallel lines*, and the child will have no difficulty of applying the same term to the sides of a door or of a window. Yet so accustomed are we to definitions, that even these simple ideas are not suffered to escape. A straight line, for example, is defined to be
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the shortest that can be drawn between two given points. Is it so, that even a man, not to talk of a child, can have no idea of a straight line till he be told that the shortest line between two points is a straight line? How many talk familiarly of a straight line who never happened to think of that fact, which is an inference only, not a definition. If I had not beforehand an idea of a straight line, I should never be able to find out, that it is the shortest that can be drawn between two points. D'Alembert strains hard, but without success, for a definition of a straight line, and of the others mentioned. It is difficult to avoid smiling at his definition of parallel lines. Draw, says he, a straight line: erect upon it two perpendiculars of the same length: upon their two extremities draw another straight line; and that line is said to be parallel to the first mentioned; as if, to understand what is meant by the expression *two parallel lines*, we must first understand what is meant by a straight line, by a perpendicular, and by two lines equal in length. A very slight reflection upon the operations of his own mind, would have taught
1 this

this author, that he could form the idea of parallel lines without running through so many intermediate steps : sight alone is sufficient to explain the term to a boy, and even to a girl. At any rate, where is the necessity of introducing the line last mentioned ? If the idea of parallels cannot be obtained from the two perpendiculars alone, the additional line drawn through their extremities will certainly not make it more clear.

Mathematical figures being in their nature complex, are capable of being defined ; and from the foregoing simple ideas, it is easy to define every one of them. For example, a circle is a figure having a point within it, named the *centre*, through which all the straight lines that can be drawn, and extended to the circumference, are equal ; a surface bounded by four equal straight lines, and having four right angles, is termed a *square* ; and a cube is a solid, of which all the six surfaces are squares.

In the investigation of mathematical truths, we assist the imagination, by drawing figures upon paper that resemble our ideas. There is no necessity for a perfect

resemblance : a black spot, which in reality is a small round surface, serves to represent a mathematical point ; and a black line, which in reality is a long narrow surface, serves to represent a mathematical line. When we reason about the figures composed of such lines, it is sufficient that these figures have some appearance of regularity : less or more is of no importance ; because our reasoning is not founded upon them, but upon our ideas. Thus, to demonstrate that the three angles of a triangle are equal to two right angles, a triangle is drawn upon paper, in order to keep the mind steady to its object. After tracing the steps that lead to the conclusion, we are satisfied that the proposition is true ; being conscious that the reasoning is built upon the ideal figure, not upon that which is drawn upon the paper. And being also conscious, that the enquiry is carried on independent of any particular length of the sides ; we are satisfied of the universality of the proposition, and of its being applicable to all triangles whatever.

Numbers considered by themselves, abstractedly from things, make the subject
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of arithmetic. And with respect both to mathematical and arithmetical reasonings, which frequently consist of many steps, the process is shortened by the invention of signs, which, by a single dash of the pen, express clearly what would require many words. By that means, a very long chain of reasoning is expressed by a few symbols; a method that contributes greatly to readiness of comprehension. If in such reasonings words were necessary, the mind, embarrassed with their multitude, would have great difficulty to follow any long chain of reasoning. A line drawn upon paper represents an ideal line, and a few simple characters represent the abstract ideas of number.

Arithmetical reasoning, like mathematical, depends entirely upon the relation of equality, which can be ascertained with the greatest certainty among many ideas. Hence, reasonings upon such ideas afford the highest degree of conviction. I do not say, however, that this is always the case; for a man who is conscious of his own fallibility, is seldom without some degree of diffidence, where the reasoning consists of many steps. And tho' on a re-

view, no error be discovered, yet he is conscious that there may be errors, tho' they have escaped him.

As to the other kind of demonstrative reasoning, founded on propositions of which we are intuitively certain; I justly call it *demonstrative*, because it affords the same conviction that arises from mathematical reasoning. In both, the means of conviction are the same, viz. a clear perception of the relation between two ideas: and there are many relations of which we have ideas no less clear than of equality; witness substance and quality, the whole and its parts, cause and effect, and many others. From the intuitive proposition, for example, That nothing which begins to exist can exist without a cause, I can conclude, that some one being must have existed from all eternity, with no less certainty, than that the three angles of a triangle are equal to two right angles.

What falls next in order, is that inferior sort of knowledge which is termed *opinion*; and which, like knowledge properly so termed, is founded in some instances upon intuition, and in some upon reasoning. But it differs from knowledge properly

properly so termed in the following particular, that it produces different degrees of conviction, sometimes approaching to certainty, sometimes sinking toward the verge of improbability. The constancy and uniformity of natural operations, is a fit subject for illustrating that difference. The future successive changes of day and night, of winter and summer, and of other successions which have hitherto been constant and uniform, fall under intuitive knowledge, because of these we have the highest conviction. As the conviction is inferior of successions that hitherto have varied in any degree, these fall under intuitive opinion. We expect summer after winter with the utmost confidence; but we have not the same confidence in expecting a hot summer or a cold winter. And yet the probability approaches much nearer to certainty, than the intuitive opinion we have, that the operations of nature are extremely simple, a proposition that is little rely'd on.

As to opinion founded on reasoning, it is obvious, that the conviction produced by reasoning, can never rise above what is produced by the intuitive proposition upon
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on which the reasoning is founded. And that it may be weaker, will appear from considering, that even where the fundamental proposition is certain, it may lead to the conclusive opinion by intermediate propositions, that are probable only, not certain. In a word, it holds in general with respect to every sort of reasoning, that the conclusive proposition can never rise higher in point of conviction, than the very lowest of the intuitive propositions employ'd as steps in the reasoning.

The perception we have of the contingency of future events, opens a wide field to our reasoning about probabilities. That perception involves more or less doubt according to its subject. In some instances, the event is perceived to be extremely doubtful; in others, it is perceived to be less doubtful. It appears altogether doubtful, in throwing a dye, which of the six sides will turn up; and for that reason, we cannot justly conclude for one rather than for another. If one only of the six sides be marked with a figure, we conclude, that a blank will turn up; and five to one is an equal wager that such will be the effect. In judging of the future behaviour

haviour of a man who has hitherto been governed by interest, we may conclude with a probability approaching to certainty, that interest will continue to prevail.

Belief comes last in order, which, as defined above, is knowledge of the truth of facts that falls below certainty, and involves in its nature some degree of doubt. It is also of two kinds ; one founded upon intuition, and one upon reasoning. Thus, knowledge, opinion, belief, are all of them equally distinguishable into intuitive and discursive. Of intuitive belief, I discover three different sources or causes. First, A present object. Second, An object formerly present. Third, The testimony of others.

To have a clear conception of the first cause, it must be observed, that among the simple perceptions that compose the complex perception of a present object, a perception of real and present existence is one. This perception rises commonly to certainty ; in which case it is a branch of knowledge properly so termed ; and is handled as such above. But this perception falls below certainty in some instances ; as where an object, seen at a
great

great distance or in a fog, is perceived to be a horse, but so indistinctly as to make it a probability only. The perception in such a case is termed *belief*. Both perceptions are fundamentally of the same nature; being simple perceptions of real existence. They differ only in point of distinctness: the perception of reality that makes a branch of knowledge, is so clear and distinct as to exclude all doubt or hesitation: the perception of reality that occasions belief, being less clear and distinct, makes not the existence of the object certain to us, but only probable.

With respect to the second cause; the existence of an absent object, formerly seen, amounts not to a certainty; and therefore is the subject of belief only, not of knowledge. Things are in a continual flux from production to dissolution; and our senses are accommodated to that variable scene: a present object admits no doubt of its existence; but after it is removed, its existence becomes less certain, and in time sinks down to a slight degree of probability.

Human testimony, the third cause, produces belief, more or less strong, according

ding to circumstances. In general, nature leads us to rely upon the veracity of each other ; and commonly the degree of reliance is proportioned to the degree of veracity. Sometimes belief approaches to certainty, as when it is founded on the evidence of persons above exception as to veracity. Sometimes it sinks to the lowest degree of probability, as when a fact is told by one who has no great reputation for truth. The nature of the fact, common or uncommon, has likewise an influence : an ordinary incident gains credit upon very slight evidence ; but it requires the strongest evidence to overcome the improbability of an event that deviates from the ordinary course of nature. At the same time, it must be observed, that belief is not always founded upon rational principles. There are biases and weaknesses in human nature that sometimes disturb the operation, and produce belief without sufficient or proper evidence : we are disposed to believe on very slight evidence, an interesting event, however rare or singular, that alarms and agitates the mind ; because the mind in agitation is remarkably susceptible of impressions : for

which reason, stories of ghosts and apparitions pass current with the vulgar. Eloquence also has great power over the mind; and, by making deep impressions, enforces the belief of facts upon evidence that would not be regarded in a cool moment.

The dependence that our perception of real existence, and consequently belief, hath upon oral evidence, enlivens social intercourse, and promotes society. But the perception of real existence has a still more extensive influence; for from that perception is derived a great part of the entertainment we find in history, and in historical fables (*a*). At the same time, a perception that may be raised by fiction as well as by truth, would often mislead were we abandoned to its impulse: but the God of nature hath provided a remedy for that evil, by erecting within the mind a tribunal, to which there lies an appeal from the rash impressions of sense. When the delusion of eloquence or of dread subsides, the perplexed mind is uncertain what to believe. A regular process commences, counsel is heard, evidence pro-

(a) Elements of Criticism, ch. 2. part 1. § 7.

duced,

duced, and a final judgement pronounced, sometimes confirming, sometimes varying, the belief impressed upon us by the lively perception of reality. Thus, by a wise appointment of nature, intuitive belief is subjected to rational discussion: when confirmed by reason, it turns more vigorous and authoritative: when contradicted by reason, it disappears among sensible people. In some instances, it is too headstrong for reason; as in the case of hobgoblins and apparitions, which pass current among the vulgar in spite of reason.

We proceed to the other kind of belief, that which is founded on reasoning; to which, when intuition fails us, we must have recourse for ascertaining certain facts. Thus, from known effects, we infer the existence of unknown causes. That an effect must have a cause, is an intuitive proposition; but to ascertain what particular thing is the cause, requires commonly a process of reasoning. This is one of the means by which the Deity, the primary cause, is made known to us, as mentioned above. Reason, in tracing causes from known effects, produces different degrees of conviction. It sometimes

produces certainty, as in proving the existence of the Deity, which on that account is handled above, under the head of knowledge. For the most part it produces belief only, which, according to the strength of the reasoning, sometimes approaches to certainty, sometimes is so weak as barely to turn the scale on the side of probability. Take the following examples of different degrees of belief founded on probable reasoning. When Inigo Jones flourished and was the only architect of note in England; let it be supposed, that his model of the palace of Whitehall had been presented to a stranger, without mentioning the author. The stranger, in the first place, would be intuitively certain, that this was the work of some Being, intelligent and skilful. Secondly, He would have a conviction approaching to certainty, that the operator was a man. And, thirdly, He would have a conviction that the man was Inigo Jones; but less firm than the former. Let us next suppose another English architect little inferior in reputation to Jones; the stranger would still pronounce in favour of the latter; but his belief would be in the lowest degree.

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When we investigate the causes of certain effects, the reasoning is often founded upon the known nature of man. In the high country, for example, between Edinburgh and Glasgow, the people lay their coals at the end of their houses, without any fence to secure them from theft: whence it is rationally inferred, that coals are there in plenty. In the west of Scotland, the corn-stacks are covered with great care and nicety: whence it is inferred, that the climate is rainy. Placentia is the capital town of Biscay: the only town in Newfoundland bears the same name; from which circumstance it is conjectured, that the Biscayners were the first Europeans who made a settlement in that island.

Analogical reasoning, founded upon the uniformity of nature, is frequently employ'd in the investigation of facts; and we infer, that facts of which we are uncertain, must resemble those of the same kind that are known. The reasonings in natural philosophy are mostly of that kind. Take the following examples. We learn from experience, that proceeding from the humblest vegetable to man, there are numberless

berless classes of beings rising one above another by differences scarce perceptible; and leaving no where a single gap or interval: and from conviction of the uniformity of nature we infer, that the line is not broken off here, but is carried on in other worlds, till it ends in the Deity. I proceed to another example. Every man is conscious of a self-motive power in himself; and from the uniformity of nature, we infer the same power in every one of our own species. The argument here from analogy carries great weight, because we entertain no doubt of the uniformity of nature with respect to beings of our own kind. We apply the same argument to other animals; tho' their resemblance to man appears not so certain, as that of one man to another. But why not also apply the same argument to infer a self-motive power in matter? When we see matter in motion without an external mover, we naturally infer, that, like us, it moves itself. Another example is borrow'd from Maupertuis. "As there is no known space of the earth covered with water so large as the *Terra Australis incognita*, we may reasonably infer, that

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“ so great a part of the earth is not altogether sea, but that there must be some proportion of land.” The uniformity of nature with respect to the intermixture of sea and land, is an argument that affords but a very slender degree of conviction; and from late voyages it is discovered, that the argument holds not in fact. The following argument of the same kind, tho’ it cannot be much rely’d on, seems however better founded. “ The inhabitants of the northern hemisphere, have, in arts and sciences, excelled such of the southern as we have any knowledge of: and therefore among the latter we ought not to expect many arts, nor much cultivation.”

After a fatiguing investigation of numberless particulars which divide and scatter the thought, it may not be unpleasant to bring all under one view by a succinct recapitulation.

We have two means for discovering truth and acquiring knowledge, viz. intuition and reasoning. By intuition we discover subjects and their attributes, passions, internal action, and in short every thing that is matter of fact. By intuition we also

also discover several relations. There are some facts and many relations, that cannot be discovered by a single act of intuition, but require several such acts linked together in a chain of reasoning.

Knowledge acquired by intuition, includes for the most part certainty: in some instances it includes probability only. Knowledge acquired by reasoning, frequently includes certainty; but more frequently includes probability only.

Probable knowledge, whether founded on intuition or on reasoning, is termed *opinion* when it concerns relations; and is termed *belief* when it concerns facts. Where knowledge includes certainty, it retains its proper name.

Reasoning that produces certainty, is termed *demonstrative*; and is termed *probable*, when it only produces probability.

Demonstrative reasoning is of two kinds. The first is, where the conclusion is derived from the nature and inherent properties of the subject: mathematical reasoning is of that kind; and perhaps the only instance. The second is, where the conclusion is derived from some proposition, of which we are certain by intuition.

Probable reasoning is endless in its varieties; and affords different degrees of conviction, depending on the nature of the subject upon which it is employ'd.

S E C T. II.

Progress of Reason.

A Progress from infancy to maturity in the mind of man, similar to that in his body, has been often mentioned. The external senses, being early necessary for self-preservation, arrive quickly at maturity. The internal senses are of a slower growth, as well as every other mental power: their maturity would be of little or no use while the body is weak, and unfit for action. Reasoning, as observed in the first section, requires two mental powers, the power of invention, and that of perceiving relations. By the former are discovered intermediate propositions, having the same relation to the fundamental proposition and to the conclusion;

clusion ; and that relation is verified by the latter. Both powers are necessary to the person who frames an argument, or a chain of reasoning : the latter only, to the person who judges of it. Savages are miserably deficient in both. With respect to the former, a savage may have from his nature a talent for invention ; but it will stand him in little stead without a stock of ideas enabling him to select what may answer his purpose ; and a savage has no opportunity to acquire such a stock. With respect to the latter, he knows little of relations. And how should he know, when both study and practice are necessary for distinguishing between relations ? The understanding, at the same time, is among the illiterate obsequious to passion and prepossession ; and among them the imagination acts without control, forming conclusions often no better than mere dreams. In short, considering the many causes that mislead from just reasoning, in days especially of ignorance, the erroneous and absurd opinions that have prevailed in the world, and that continue in some measure to prevail, are far from being surprising. Were reason our only guide

guide in the conduct of life, we should have cause to complain; but our Maker has provided us with the moral sense, a guide little subject to error in matters of importance. In the sciences, reason is essential; but in the conduct of life, which is our chief concern, reason may be an useful assistant; but to be our director is not its province.

The national progress of reason has been slower in Europe, than that of any other art: statuary, painting, architecture, and other fine arts, approach nearer perfection, as well as morality and natural history. Manners and every art that appears externally, may in part be acquired by imitation and example: in reasoning there is nothing external to be laid hold of. But there is beside a particular cause that regards Europe, which is the blind deference that for many ages was paid to Aristotle, who has kept the reasoning faculty in chains more than two thousand years. In his logic, the plain and simple mode of reasoning is rejected, that which Nature dictates, and in its stead is introduced an artificial mode, showy but unsubstantial, of no use for discovering truth; but con-

trived with great art for wrangling and disputation. Considering that reason for so many ages has been immured in the enchanted castle of syllogism, where phantoms pass for realities ; the slow progress of reason toward maturity is far from being surprising. The taking of Constantinople by the Turks *ann.* 1453, unfolded a new scene, which in time relieved the world from the usurpation of Aristotle, and restored reason to her privileges. All the knowledge of Europe was centred in Constantinople ; and the learned men of that city, abhorring the Turks and their government, took refuge in Italy. The Greek language was introduced among the western nations of Europe ; and the study of Greek and Roman classics became fashionable. Men, having acquired new ideas, began to think for themselves : they exerted their native faculty of reason : the futility of Aristotle's logic became apparent to the penetrating ; and is now apparent to all. Yet so late as the year 1621, several persons were banished from Paris for contradicting that philosopher, about matter and form, and about the number of the elements. And shortly after, the
parliament

parliament of Paris prohibited, under pain of death, any thing to be taught contrary to the doctrines of Aristotle. Julius II. and Leo X, Roman Pontiffs, contributed zealously to the reformation of letters; but they did not foresee that they were also contributing to the reformation of religion, and of every science that depends on reasoning. Tho' the fetters of syllogism have many years ago been shaken off; yet, like a limb long kept from motion, the reasoning faculty has scarcely to this day attained its free and natural exercise. Mathematics is the only science that never has been cramped by syllogism, and we find reasoning there in great perfection at an early period. The very slow progress of reasoning in other matters, will appear from the following induction.

To exemplify erroneous and absurd reasonings of every sort, would be endless. The reader, I presume, will be satisfied with a few instances; and I shall endeavour to select what are amusing. For the sake of order, I divide them into three heads. First, Instances showing the imbecillity of human reason during its nonage. Second, Erroneous reasoning occasioned by
natural

natural biases. Third, Erroneous reasoning occasioned by acquired biases. With respect to the first, instances are endless of reasonings founded on erroneous premises. It was an Epicurean doctrine, That the gods have all of them a human figure; moved by the following argument, that no being of any other figure has the use of reason. Plato, taking for granted the following erroneous proposition, That every being which moves itself must have a soul, concludes that the world must have a soul, because it moves itself (*a*). Aristotle taking it for granted, without the least evidence and contrary to truth, that all heavy bodies tend to the centre of the universe, proves the earth to be the centre of the universe by the following argument. " Heavy bodies naturally tend to the centre of the universe: " we know by experience that heavy " bodies tend to the centre of the earth: " therefore the centre of the earth is the " centre of the universe." Appion ridicules the Jews for adhering literally to the precept of resting on their sabbath, so as to suffer Jerusalem to be taken that day by

(*a*) Cicero, De natura Deorum, lib. 2. § 12.

Ptolomy son of Lagus. Mark the answer of Josephus: "Whoever passes a sober judgement on this matter, will find our practice agreeable to honour and virtue; for what can be more honourable and virtuous, than to postpone our country, and even life itself, to the service of God, and of his holy religion?" A strange idea of religion, to put it in direct opposition to every moral principle! A superstitious and absurd doctrine, That God will interpose by a miracle to declare what is right in every controversy, has occasioned much erroneous reasoning and absurd practice. The practice of determining controversies by single combat, commenced about the seventh century, when religion had degenerated into superstition, and courage was esteemed the only moral virtue. The parliament of Paris, in the reign of Charles VI. appointed a single combat between two gentlemen, in order to have the judgement of God whether the one had committed a rape on the other's wife. In the 1454, John Picard being accused by his son-in-law for too great familiarity with his wife, a duel between them was appointed by the same parliament,

parliament. Völtaire justly observes, that the parliament decreed a parricide to be committed, in order to try an accusation of incest, which possibly was not committed. The trials by water and by fire, rest on the same erroneous foundation. In the former, if the person accused sunk to the bottom, it was a judgement pronounced by God that he was innocent: if he kept above, it was a judgement ~~that~~ he was guilty. Fleury (*a*) remarks, that if ever the person accused was found guilty, it was his own fault. In Sicily, a woman accused of adultery, was compelled to swear to her innocence: the oath, taken down in writing, was laid on water; and if it did not sink, the woman was innocent. We find the same practice in Japan, and in Malabar. One of the articles insisted on by the reformers in Scotland, was, That public prayers be made and the sacraments administered in the vulgar tongue. The answer of a provincial council was in the following words: "That to
 " conceive public prayers or administer
 " the sacraments in any language but Latin, is contrary to the traditions and

(*a*) Histoire Ecclesiastique.

“ practice of the Catholic church for
“ many ages past ; and that the demand
“ cannot be granted, without impiety to
“ God and disobedience to the church.”

Here it is taken for granted, that the practice of the church is always right ; which is building an argument on a very rotten foundation. The Caribbeans abstain from swines flesh ; taking it erroneously for granted, that such food would make them have small eyes, held by them a great deformity. They also abstain from eating turtle ; which they think would infect them with the laziness and stupidity of that animal. Upon the same erroneous notion, the Brasilians abstain from the flesh of ducks, and of every creature that moves slowly. It is observed of northern nations, that they do not open the mouth sufficiently for distinct articulation ; and the reason given is, that the coldness of the air makes them keep the mouth as close as possible. This reason is indolently copied by writers one from another : people enured to a cold climate feel little cold in the mouth ; beside that a cause so weak could never operate equally among so many different nations. The real cause is,

that northern tongues abound with consonants, which admit but a small aperture of the mouth. (See Elements of Criticism, chap. Beauty of language). A list of German names to be found in every catalogue of books, will make this evident, *Rutger-fius*, for example, *Faesch*. To account for a fact that is certain, any reason commonly suffices.

A talent for writing seems in Germany to be estimated by weight, as beauty is said to be in Holland. Cocceius for writing three weighty folio volumes on law, has obtained among his countrymen the epithet of *Great*. This author, handling the rules of succession in land-estates, has with most profound erudition founded all of them upon the following very simple proposition: In a competition, that descendant is entitled to be preferred who has the greatest quantity of the predecessor's blood in his veins. *Queritur*, has a man any of his predecessor's blood in his veins, otherwise than metaphorically? Simple indeed! to build an argument in law upon a pure metaphor.

Next of reasonings where the conclusion follows not from the premises, or fundamental

mental proposition. Plato endeavours to prove, that the world is endowed with wisdom, by the following argument. "The world is greater than any of its parts: therefore it is endowed with wisdom; for otherwise a man who is endowed with wisdom would be greater than the world (*a*)."

The conclusion here does not follow; for tho' man is endowed with wisdom, it follows not, that he is greater than the world in point of size. Zeno endeavours to prove, that the world has the use of reason, by an argument of the same kind. To convince the world of the truth of the four gospels, Irenæus (*b*) urges the following arguments, which he calls demonstration. "There are four quarters of the world and four cardinal winds, consequently there are four gospels in the church, as there are four pillars that support it, and four breaths of life that render it immortal." Again, "The four animals in Ezekiel's vision mark the four states of the Son of God. The lion is his royal dignity."

(*a*) Cicero, De natura Deorum, lib. 2. § 12.

(*b*) Lib. 3. cap. 11.

“ the calf, his priesthood: the beast with
 “ the face of man, his human nature;
 “ the eagle, his spirit which descends on
 “ the church. To these four animals cor-
 “ respond the four gospels, on which our
 “ Lord is seated. John, who teaches his
 “ celestial origin, is the lion, his gospel
 “ being full of confidence: Luke, who
 “ begins with the priesthood of Zachariah,
 “ is the calf: Matthew, who describes
 “ the genealogy of Christ according to the
 “ flesh, is the animal resembling a man:
 “ Mark, who begins with the prophetic
 “ spirit coming from above, is the eagle.
 “ This gospel is the shortest of all, because
 “ brevity is the character of prophecy.”
 Take a third demonstration of the truth of the
 four gospels. “ There have been four cove-
 “ nants; the first under Adam, the second
 “ under Noah, the third under Moses, the
 “ fourth under Jesus Christ.” Whence
 Ireneus concludes, that they are vain,
 rash, and ignorant, who admit more or
 less than four gospels. St Cyprian in his
 exhortation to martyrdom, after having
 applied the mysterious number seven, to
 the seven days of the creation, to the seven
 thousand years of the world’s duration, to
 the

the seven spirits that stand before God, to the seven lamps of the tabernacle, to the seven candlesticks of the Apocalypse, to the seven pillars of wisdom, to the seven children of the barren woman, to the seven women who took one man for their husband, to the seven brothers of the Maccabees ; observes, that St Paul mentions that number as a privileged number ; which, says he, is the reason why he did not write but to seven churches. Pope Gregory, writing in favour of the four councils, viz. Nice, Constantinople, Ephesus, and Calcedon, reasons thus : “ That as there
“ are four evangelists, there ought also to
“ be four councils.” What would he have said, if he had lived 100 years later, when there were many more than four ? In administering the sacrament of the Lord’s supper, it was ordered, that the host should be covered with a clean linen cloth ; because, says the Canon law, the body of our Lord Jesus Christ was buried in a clean linen cloth. Josephus, in his answer to Appion, urges the following argument for the temple of Jerusalem : “ As there
“ is but one God, and one world, it holds
“ in analogy, that there should be but one
“ temple.”

“temple.” At that rate, there should be but one worshipper. And why should that one temple be at Jerusalem rather than at Rome, or at Pekin? The Syrians and Greeks did not for a long time eat fish. Two reasons are assigned: one is, that fish is not sacrificed to the gods; the other, that being immersed in the sea, they look not up to heaven (*a*). The first would afford a more plausible argument for eating fish. And if the other have any weight, it would be an argument for sacrificing men, and neither fish nor cattle. In justification of the Salic law, which prohibits female succession, it was long held a conclusive argument, That in the scripture the lilies are said neither to work nor to spin. Vieira, termed by his countrymen *the Lusitanian Cicero*, published sermons, one of which begins thus, “Were the Supreme Being to show himself visibly, he would chuse the circle rather than the triangle, the square, the pentagon, the duodecagon, or any other figure.” But why appear in any of these figures? And if he were obliged to appear in so mean a shape, a globe is un-

(*a*) Sir John Marsham, p. 221.

doubtedly

doubtedly more beautiful than a circle. Peter Hantz of Horn, who lived in the last century, imagined that Noah's ark is the true construction of a ship; "which," said he, "is the workmanship of God, " and therefore perfect;" as if a vessel made merely for floating on the water, were the best also for sailing. Sixty or seventy years ago, the fashion prevailed, in imitation of birds, to swallow small stones for the sake of digestion; as if what is proper for birds, were equally proper for men. The Spaniards, who laid waste a great part of the West Indies, endeavoured to excuse their cruelties, by maintaining, that the natives were not men, but a species of the Ouran Outang; for no better reason, than that they were of a copper colour, spoke an unknown language, and had no beard. The Pope issued a bull, declaring, that it pleased him and the Holy Ghost to acknowledge the Americans to be of the human race. This bull was not received cordially; for in the council of Lima, *ann.* 1583, it was violently disputed, whether the Americans had so much understanding as to be admitted to the sacraments of the church.

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In the 1440, the Portuguese solicited the Pope's permission to double the Cape of Good Hope, and to reduce to perpetual servitude the negroes, because they had the colour of the damned, and never went to church. In the Frederician Code, a proposition is laid down, That by the law of nature no man can make a testament. And in support of that proposition the following argument is urged, which is said to be a demonstration: "No deed can be a testament while a man is alive, because it is not necessarily his *ultima voluntas*; and no man can make a testament after his death." Both premises are true, but the negative conclusion does not follow: it is true a man's deed is not his *ultima voluntas*, while he is alive: but does it not become his *ultima voluntas*, when he dies without altering the deed?

Many reasonings have passed current in the world as good coin, where the premises are not true; nor, supposing them true, would they infer the conclusion. Plato in his Phædon relies on the following argument for the immortality of the soul. "Is not death the opposite of life?

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"Certainly.

“ Certainly. And do they not give birth
“ to each other? Certainly. What then
“ is produced from life? Death. And
“ what from death? Life. It is then
“ from the dead that all things living
“ proceed; and consequently souls exist
“ after death.” God, says Plato, made
but five worlds, because according to his
definition there are but five regular bodies
in geometry. Is that a reason for confi-
ning the Almighty to five worlds, not one
less or more. Aristotle, who wrote a book
upon mechanics, was much puzzled about
the equilibrium of a balance, when un-
equal weights ~~are~~ hung upon it at different
distances from the centre. Having ob-
served, that the arms of the balance de-
scribe portions of a circle, he accounted
for the equilibrium by a notable argu-
ment: “ All the properties of the circle are
“ wonderful: the equilibrium of the two
“ weights that describe portions of a circle
“ is wonderful. *Ergo*, the equilibrium
“ must be one of the properties of the
“ circle.” What are we to think of Ari-
stotle’s logic, when we find him capable
of such childish reasoning? And yet that
work has been the admiration of all the

world for centuries upon centuries. Nay, that foolish argument has been espoused and commented upon by his disciples, for the same length of time. To proceed to another instance: Marriage within the fourth degree of consanguinity, as well as of affinity, is prohibited by the Lateran council; and the reason given is, That the body being made up of the four elements, has four different humours in it *. The Roman Catholics began with beheading heretics, hanging them, or stoning them to death. But such punishments were discovered to be too slight, in matters of faith. It was demonstrated, that heretics ought to be burnt in a slow fire: it being taken for granted, that God punishes them in the other world with a slow fire; it was inferred, "That as every prince

* The original is curious: "*Quaternarius enim numerus bene congruit prohibitioni conjugii corporalis; de quo dicit Apostolus, Quod vir non habet potestatem sui corporis, sed mulier; neque mulier habet potestatem sui corporis, sed vir; quia quatuor sunt humores in corpore, quod constat ex quatuor elementis.*" Were men who could be guilty of such nonsense, qualified to be our leaders in the most important of all concerns, that of eternal salvation?

" and

“ and every magistrate is the image of
 “ God in this world; they ought to follow
 “ his example.” Here is a double error in
 reasoning: first, the taking for granted
 the fundamental proposition, which is
 surely not self-evident; and next, the
 drawing a conclusion from it without any
 connection. The heat of the sun, by the re-
 flection of its rays from the earth, is greatly
 encreased in passing over the great country
 of Africa. Hence rich mines of gold,
 and the black complexion of the inhabi-
 tants. In passing over the Atlantic it is
 cooled: and by the time it reaches the
 continent of America, it has lost much of
 its vigour. Hence no gold on the east side
 of America. But being heated again in
 passing over a great space of land, it pro-
 duces much gold in Peru. Is not this rea-
 soning curious? What follows is no less
 so. Huetius Bishop of Auveranches, de-
 claiming against the vanity of establishing
 a perpetual succession of descents, ob-
 serves, that other writers had exposed it
 upon moral principles, but that he would
 cut it down with a plain metaphysical ar-
 gument. “ Father and son are relative
 “ ideas; and the relation is at an end by

“ the death of either. My will therefore
“ to leave my estate to my son, is absurd ;
“ because after my death, he is no longer
“ my son.” By the same sort of argu-
ment he demonstrates the vanity of fame.
“ The relation that subsists between a man
“ and his character, is at an end by his
“ death : and therefore, that the charac-
“ ter given him by the world, belongs not
“ to him nor to any person.” Huetius is
not the only writer who has urged meta-
physical arguments contrary to common
sense.

It once was a general opinion among
those who dwelt near the sea, that people
never die but during the ebb of the tide.
And there were not wanting plausible rea-
sons. The sea, in flowing, carries with
it vivifying particles that recruit the sick.
The sea is salt, and salt preserves from
rottenness. When the sea sinks in ebbing,
every thing sinks with it : nature lan-
guishes : the sick are not vivified : they
die.

What shall be said of a reasoning where
the conclusion is a flat contradiction to the
premises ? If a man shooting at a wild
pigeon happen unfortunately to kill his
neighbour,

neighbour, it is in the English law excusable homicide ; because the shooting an animal that is no man's property, is a lawful act. If the aim be at a tame fowl for amusement, which is a trespass on the property of another, the death of the man is manslaughter. If the tame fowl be shot in order to be stolen, it is murder, by reason of the felonious intent. From this last the following consequence is drawn, that if a man, endeavouring to kill another, misses his blow and happeneth to kill himself, he is in judgement of law guilty of *wilful and deliberate self-murder* (a). Strange reasoning ! to construe an act to be wilful and deliberate self-murder, contrary to the very thing that is supposed.

A plentiful source of inconclusive reasoning, which prevails greatly during the infancy of the rational faculty, is the making of no proper distinction between strong and weak relations. Minutius Felix, in his apology for the Christians, endeavours to prove the unity of the Deity from a most distant analogy or relation, " That there is but one king of the bees,

(a) Hale, Pleas of the Crown, cap. 1. 413.

" and

“ and that more than one chief magistrate
“ would breed confusion.” It is a prostitution of reason to offer such an argument for the unity of the Deity. But any argument passes current, in support of a proposition that we know beforehand to be true. Plutarch says, “ that it seemed
“ to have happened by the peculiar direction of the gods, that Numa was born
“ on the 21st of April, the very day in
“ which Rome was founded by Romulus;” a very childish inference from a mere accident. Supposing Italy to have been tolerably populous, as undoubtedly it was at that period, the 21st of April, or any day of April, might have given birth to thousands. In many countries, the surgeons and barbers are classed together, as members of the same trade, from a very slight relation, that both of them operate upon the human body. The Jews enjoy’d the reputation, for centuries, of being skilful physicians. Francis I. of France, having long laboured under a disease that eluded the art of his own physicians, apply’d to the Emperor Charles V. for a Jewish physician from Spain. Finding that the person sent had been converted

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ed to Christianity, the King refused to employ him ; as if a Jew were to lose his skill upon being converted to Christianity. Why did not the King order one of his own physicians to be converted to Judaism ? The following childish argument is built upon an extreme slight relation, that between our Saviour and the wooden cross he suffered on. " Believe me," says Julius Firmicus, " that the devil omits nothing to destroy miserable mortals ; converting himself into every different form, and employing every sort of artifice. He appoints wood to be used in sacrificing to him, knowing that our Saviour, fixed to the cross, would bestow immortality upon all his followers. A pine-tree is cut down, and used in sacrificing to the mother of the gods. A wooden image of Osiris is buried in sacrificing to Isis. A wooden image of Proserpina is bemoaned for forty nights, and then thrown into the flames. Deceived mortals, these flames can do you no service. On the contrary, the fire that is destined for your punishment rages without end. Learn from me to know that divine wood which will set

" you

“ you free. A wooden ark saved the human race from the universal deluge. Abraham put wood upon the shoulders of his son Isaac. The wooden rod stretched out by Aaron brought the children of Israel out of the land of Egypt. Wood sweetened the bitter waters of Marah, and comforted the children of Israel after wandering three days without water. A wooden rod struck water out of the rock. The rod of God in the hand of Moses overcame Amalek. The patriarch dreamed, that he saw angels descending and ascending upon a wooden ladder : and the law of God was inclosed in a wooden ark. These things were exhibited, that, as if it were by certain steps, we might ascend to the wood of the cross, which is our salvation. The wood of the cross sustains the heavenly machine, supports the foundations of the earth, and leads men to eternal life. The wood of the devil burns and perishes, and its ashes carries down sinners to the lowest pit of hell.” The very slightest relations make an impression on a weak understanding. It was a fancy of Ant-

ninus Geta, in ordering his table, to have services composed of dishes beginning with the same letter; such as lamb and lobster; broth, beef, blood-pudding; pork, plumb-cake, pigeons, potatoes. The name of John king of Scotland was changed, into *Robert*, for no better reason than that the Johns of France and of England had been unfortunate.

In reasoning, instances are not rare, of mistaking the cause for the effect, and the effect for the cause. When a stone is thrown from the hand, the continuance of its motion in the air, was once universally accounted for as follows: "That the air follows the stone at the heels; and pushes it on." The effect here is mistaken for the cause: the air indeed follows the stone at the heels; but it only fills the vacuity made by the stone, and does not push it on. It has been flyly urged against the art of physic, that physicians are rare among temperate people, such as have no wants but those of nature; and that where physicians abound, diseases abound. This is mistaking the cause for the effect, and the effect for the cause: people in health have no occasion for a physician;

but indolence and luxury beget diseases, and diseases beget physicians.

During the nonage of reason, men are satisfied with words merely, instead of an argument. A sea-prospect is charming; but we soon tire of an unbounded prospect. It would not give satisfaction to say, that it is too extensive; for why should not a prospect be relished, however extensive? But employ a foreign term and say, that it is *trop vaste*, we enquire no farther: a term that is not familiar, makes an impression, and captivates weak reason. This observation accounts for a mode of writing formerly in common use, that of stuffing our language with Latin words and phrases. These are now laid aside as useless; because a proper emphasis in reading, makes an impression deeper than any foreign term can do.

There is one proof of the imbecillity of human reason in dark times, which would scarce be believed, were not the fact supported by incontestable evidence. Instead of explaining any natural appearance by searching for a cause, it has been common to account for it by inventing a fable, which gave satisfaction without enquiring farther,

farther. For example, instead of giving the true cause of the succession of day and night, the sacred book of the Scandinavians, termed *Edda*, accounts for that succession by a tale: "The giant Nor had a daughter named *Night*, of a dark complexion. "She was wedded to Daglingar, of the "family of the gods. They had a male "child, which they named *Day*, beautiful and shining like all of his father's "family. The universal father took "Night and Day, placed them in heaven, "and gave to each a horse and a car, that "they might travel round the world, the "one after the other. Night goes first "upon her horse named *Rimfaxe*, [Frosty "Mane], who moistens the earth with the "foam that drops from his bit, which is "the dew. The horse belonging to Day is "named *Skinfaxe*, [Shining Mane], who by "his radiant mane illuminates the air and "the earth." It is observed by the translator of the *Edda*, that this way of accounting for things is well suited to the turn of the human mind, endowed with curiosity that is keen; but easily satisfied, often with words instead of ideas. Zoroaster, by a similar fable, accounts for the

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growth of evil in this world. He invents a good and an evil principle named *Oromazes* and *Arimanes*, who are in continual conflict for preference. At the last day, Oromazes will be reunited to the supreme God, from whom he issued. Arimanes will be subdued, darkness destroyed; and the world, purified by an universal conflagration, will become a luminous and shining abode, from which evil will be excluded. I return to the Edda, which is stored with fables of this kind. The highest notion savages can form of the gods, is that of men endowed with extraordinary power and knowledge. The only puzzling circumstance is, how they differ so much from other men as to be immortal. The Edda accounts for it by the following fable. "The gods prevented the effect of
" old age and decay, by eating certain
" apples, trusted to the care of *Iduna*.
" *Loke*, the Momus of the Scandinavians,
" craftily convey'd away *Iduna*, and concealed her in a wood, under the custody of a giant. The gods, beginning
" to wax old and gray, detected the author of the theft; and, by terrible menaces, compelled him to employ his ut-
" most

“ most cunning, for regaining Iduna and
“ her apples, in which he was successful.”

The origin of poetry is thus accounted for in the same work: “ The gods formed
“ *Cuafer*, who traversed the earth, teaching wisdom to men. He was treacherously slain by two dwarfs, who mixed
“ honey with his blood, and composed a
“ liquor that renders all who drink of it
“ poets. These dwarfs having incurred
“ the resentment of a certain giant, were
“ exposed by him upon a rock, surrounded on all sides with the sea. They gave
“ for their ransom the said liquor, which
“ the giant delivered to his daughter *Gunloda*. The precious potion was eagerly
“ sought for by the gods; but how were they to come at it? *Odin*, in the shape
“ of a worm, crept through a crevice into the cavern where the liquor was concealed. Then resuming his natural
“ shape, and obtaining *Gunloda*’s consent
“ to take three draughts, he sucked up
“ the whole; and, transforming himself
“ into an eagle, flew away to *Asgard*. The
“ giant, who was a magician, flew with
“ all speed after *Odin*, and came up with
“ him near the gate of *Asgard*. The gods
“ issued

“ issued out of their palaces to assist their
 “ master ; and presented to him all the
 “ pitchers they could lay hands on, which
 “ he instantly filled with the precious li-
 “ quor. But in the hurry of discharging
 “ his load, Odin poured only part of the
 “ liquor through his beak, the rest being
 “ emitted through a less pure vent. The
 “ former is bestow’d by the gods upon
 “ good poets, to inspire them with divine
 “ enthusiasm. The latter, which is in
 “ much greater plenty, is bestow’d libe-
 “ rally on all who apply for it ; by which
 “ means the world is pestered with an
 “ endless quantity of wretched verses.”

Ignorance is equally credulous in all ages,
 Albert, surnamed *the Great*, flourished in
 the thirteenth century, and was a man of
 real knowledge. During the course of his
 education he was remarkably dull ; and
 some years before he died became a sort of
 changeling. That singularity produced
 the following story. The holy Virgin,
 appearing to him, demanded, whether he
 would excel in philosophy or in theology ;
 upon his choosing the former, she promised,
 that he should become an incomparable
 philosopher ; but added, that to punish
 him

him for not preferring theology, he should become stupid again as at first.

Upon a slight view, it may appear unaccountable, that even the grossest savages should take a childish tale for a solid reason. But nature aids the deception: where things are related in a lively manner, and every circumstance appears as passing in our sight, we take all for granted as true (*a*). Can an ignorant rustic doubt of inspiration, when he sees as it were the poet sipping the pure celestial liquor? And how can that poet fail to produce bad verses, who feeds on the excrements that drop from the fundament even of a deity?

In accounting for natural appearances, even good writers have betray'd a weakness in reasoning, little inferior to that above mentioned. They do not indeed put off their disciples with a tale; but they put them off with a mere supposition, not more real than the tale. Descartes ascribes the motion of the planets to a vortex of ether whirling round and round. He thought not of enquiring whether there really be such a vortex, nor what makes

(*a*) Elements of Criticism, vol. 1. p. 100. edit. 5.

it move. M. Buffon forms the earth out of a splinter of the sun, struck off by a comet. May not one be permitted humbly to enquire at that eminent philosopher, what formed the comet? This passes for solid reasoning; and yet we laugh at the poor Indian, who supports the earth from falling by an elephant, and the elephant by a tortoise.

It is still more ridiculous to reason up on what is acknowledged to be a fiction, as if it were real. Such are the fictions admitted in the Roman law. A Roman taken captive in war, lost his privilege of being a Roman citizen; for freedom was held essential to that privilege. But what if he made his escape after perhaps an hour's detention? The hardship in that case ought to have suggested an alteration of the law, so far as to suspend the privilege no longer than the captivity subsisted. But the ancient Romans were not so ingenious. They remedied the hardship by a fiction, that the man never had been a captive. The Frederician code banishes from the law of Prussia an endless number of fictions found in the Roman law (a). Yet

(a) Preface, § 28.

afterward,

afterward, treating of personal rights, it is laid down as a rule, That a child in the womb is feigned or supposed to be born when the fiction is for its advantage (*a*). To a weak reasoner, a fiction is a happy contrivance for resolving intricate questions. Such is the constitution of England, that the English law-courts are merely territorial; and that no fact happening abroad comes under their cognisance. An Englishman, after murdering his fellow-traveller in France, returns to his native country. What is to be done, for guilt ought not to pass unpunished? The crime is feigned to have been committed in England.

Ancient histories are full of incredible facts that passed current during the infancy of reason, which at present would be rejected with contempt. Every one who is conversant in the history of ancient nations, can recall instances without end. Does any person believe at present, tho' gravely reported by historians, that in old Rome there was a law, for cutting into pieces the body of a bankrupt, and distri-

(*a*) Part 1. book 1. title 4. § 4.

buting the parts among his creditors ? The story of Porfenna and Scevola, is highly romantic ; and the story of Vampires in Hungary, shamefully absurd. There is no reason to believe, there ever was such a state as that of the Amazons ; and the story of Thalestris and Alexander the Great is certainly a fiction. Scotch historians describe gravely and circumstantially the battle of Luncarty, as if they had been eye-witnesses. A peasant and his two sons, it is said, were ploughing in an adjacent field, during the heat of the action. Enraged at their countrymen for turning their backs, they broke the plough in pieces ; and each laying hold of a part, rushed into the midst of the battle, and obtained a complete victory over the Danes. This story has every mark of fiction : A man following out unconcernedly his ordinary occupation of ploughing, in sight of a battle, on which depended his wife and children, his goods, and perhaps his own life : three men, without rank or figure, with only a stick in the hand of each, stemming the tide of victory, and turning the fate of battle. I mention not that a plough was unknown
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in Scotland for a century or two after that battle; for that circumstance could not create a doubt in the historian, if he was ignorant of it.

Reason, with respect to its progress, is singular: Morals, manners, and every thing that appears externally, may in part be acquired by imitation and example; which have not the slightest influence upon the reasoning faculty. The only means for advancing that faculty to maturity, are indefatigable study and practice; and even these will not carry a man one step beyond the subjects he is conversant about: examples are not rare of men extremely expert in one science, and grossly deficient in others. Many able mathematicians are novices in politics, and even in the common arts of life: study and practice have ripened them in every relation of equality, while they remain ignorant, like the vulgar, about other relations. A man, in like manner, who has bestowed much time and thought in political matters, may be a child as to other branches of knowledge*.

I

* Pascal, the celebrated author of *Lettres Provinciales*,

I proceed to the second article, containing erroneous reasoning occasioned by natural biases. The first bias I shall mention has an extensive influence. What is seen, makes a deeper impression than what is reported, or discovered by reflection. Hence it is, that in judging of right and wrong, the ignorant and illiterate are struck with the external act only, without penetrating into will or intention which lie out of sight. Thus with respect to covenants, laws, vows, and other acts that are completed by words, the whole weight in days of ignorance is laid upon the external expression, with no regard to the meaning of the speaker or writer. The blessing bestow'd by Isaac upon his son

vinciales, in order to explain the infinity and indivisibility of the Deity, has the following words. "I will show you a thing both infinite and indivisible. It is a point moving with infinite celerity: that point is in all places at once, and entire in every place." What an absurdity, says Voltaire, to ascribe motion to a mathematical point, that has no existence but in the mind of the geometer! that it can be every where at the same instant, and that it can move with infinite celerity! as if infinite celerity could actually exist. Every word, adds he, is big with absurdity; and yet he was a great man who uttered that stuff.

Jacob,

Jacob, mistaking him for Esau, is an illustrious instance. Not only was the blessing intended for Esau, but Jacob, by deceiving his father, had rendered himself unworthy of it (a); yet Isaac had pronounced the sounds, and it was not in his power to unsay them: *Nescit vox emissa reverti* *. Joshua, grossly imposed on by the Gibeonites denying that they were Canaanites, made a covenant with them; and yet, tho' he found them to be Canaanites, he held himself to be bound. Led by the same bias, people think it sufficient to fulfil the words of a vow, however short of intention. The Duke of Lancaster, vexed at the obstinate resistance of Rennes, a town in Britany, vowed in wrath not to raise the siege till he had planted the English colours upon one of the gates. He found it necessary to raise the siege; but his vow stood in the way. The governor relieved him from his

* Many more are killed by a fall from a horse or by a fever, than by thunder. Yet we are much more afraid of the latter. It is the sound that terrifies; tho' every man knows that the danger is over when he hears the sound.

(a) Genesis, chap. 27.

scruple,

foruple, permitting him to plant his colours upon one of the gates; and he was satisfied that his vow was fulfilled. The following is an example of an absurd conclusion deduced from a precept taken literally, against common sense. We are ordered by the Apostle, to pray always; from which Jerom, one of the fathers, argues thus: "Conjugal enjoyment is inconsistent with praying; *ergo*, conjugal enjoyment is a sin." By the same argument it may be proved, that eating and drinking are sins; and that sleeping is a great sin, being a great interruption to praying. With respect to another text, "That a bishop must be blameless, the husband of one wife" taken literally, a very different conclusion is drawn in Abyssinia, That no man can be ordained a presbyter till he be married. Prohibitions have been interpreted in the same shallow manner. Lord Clarendon gives two instances, both of them relative to the great fire of London. The mayor proposing to pull down a house in order to stop the progress of the fire, was opposed by the lawyers, who declared the act to be unlawful; and the house was burnt without being pulled.

pulled down. About the same time it was proposed to break open some houses in the temple for saving the furniture, the possessors being in the country; but it was declared burglary to force open a door without consent of the possessor. Such literal interpretation, contrary to common sense, has been extended even to inflict punishment. Ifadas was bathing when the alarm was given in Lacedemon, that Epaminondas was at hand with a numerous army. Naked as he was, he rushed against the enemy with a spear in one hand and a sword in the other, bearing down all before him. The Ephori fined him for going to battle unarmed; but honoured him with a garland for his gallant behaviour. How absurd to think that the law was intended for such a case! and how much more absurd to think, that the same act ought to be both punished and rewarded! The King of Castile being carried off his horse by a hunted hart, was saved by a person at hand, who cut his belt. The judges thought a pardon absolutely requisite, to relieve from capital punishment a man who had lifted a sword against

against his sovereign *. It is a salutary regulation, that a man whom absent cannot be tried for his life. Pope Formosus died suddenly without suffering any punishment for his crimes. He was raised from his grave, dressed in his pontifical habit; and in that shape a criminal process went on against him. Could it seriously be thought, that a rotten carcass brought into court was sufficient to fulfil the law? The same absurd farce was play'd in Scotland, upon the body of Logan of Restalrig, several years after his interment. The body of Tancred King of Sicily was raised from the grave, and the head cut off for supposed rebellion. Henry IV. of Castile was deposed in absence; but, for a colour of justice, the following ridiculous scene was acted. A wooden statue dressed in a royal habit, was placed on a theatre; and the sentence of deposition was solemnly

* A person unacquainted with the history of law, will imagine that Swift has carried beyond all bounds his satire against lawyers, in saying, that Gulliver had incurred a capital punishment, for saving the Emperor's palace by pissing out the fire; it being capital in any person of what quality soever, to make water within the precincts of the palace.

read to it, as if it had been the King himself. The Archbishop of Toledo seized the crown, another the sceptre, a third the sword; and the ceremony was concluded with proclaiming another king. How humbling are such scenes to man, who values himself upon the faculty of reason as his prime attribute! An expedient of that kind would now be rejected with disdain, as fit only to amuse children; and yet it grieves me to observe that law-proceedings are not yet totally purged of such absurdities. By a law in Holland, the criminal's confession is essential to a capital punishment, no other evidence being held sufficient: and yet, if he insist on his innocence, he is tortured till he pronounce the words of confession; as if sounds merely were sufficient, without will or intention. The practice of England in a similar case, is no less absurd. Confession is not there required; but it is required, that the person accused shall plead, and say whether he be innocent or guilty. But what if he stand mute? He is pressed down by weights till he plead; and if he continue mute, he is pressed till he give up the ghost, a tor-

ture known by the name of *Painforte* or *dure* *. Further, law copying religion, has exalted ceremonies above the substantial part. In England, so strictly has form been adhered to, as to make the most trivial defect in words fatal, however certain the meaning be. *Murdredavit* for *murdravit*, *feloniter* for *felonite*, have been adjudged to vitiate an indictment. *Burgariter* for *burglariter* hath been a fatal objection; but *burgulariter* hath been holden good. Webster being indicted for murder, and the stroke being laid "*sinistro bracio*" instead of "*brachio*," he was dismissed. *A. B. alias dictus A. C. Butcher*, was found to vitiate the indictment; because it ought to have been *A. B. Butcher, alias dictus A. C. Butcher*. So *gladium in dextra sua*, without *manu*.

No bias in human nature is more prevalent than a desire to anticipate futurity, by being made acquainted beforehand

* Since the above was written, the parliament has enacted, That persons arraigned for felony or piracy, who stand mute, or refuse to answer directly to the indictment, shall be held as confessing, and judgement shall pass against them, as if they had been convicted by verdict or confession.

with what will happen. It was indulged without reserve in dark times; and hence omens, auguries, dreams, judicial astrology, oracles, and prophecies, without end. It shows strange weakness, not to see, that such foreknowledge would be a gift more pernicious to man, than Pandora's box; it would deprive him of every motive to action, and leave no place for sagacity, nor for contriving means to bring about a desired event. Life is an enchanted castle, opening to interesting views; that inflame the imagination and excite industry. Remove the veil that hides futurity. To an active, bustling, animating scene, succeeds a dead stupor, men converted into statues; passive like inert matter, because there remains not a single motive to action. Anxiety about futurity, rouses our sagacity to prepare for what may happen; but an appetite to know what sagacity cannot discover, is a weakness, in nature inconsistent with every rational principle.

* Foreknowledge of future events, differs widely from a conviction, that all events are fixed and immutable: the latter leaves us free to activity; the former annihilates all activity.

-Propensity to things rare and wonderful, is a natural bias as universal as the former. Any strange or unaccountable report rouses the attention, and influences the mind: we suck it in greedily, without to be true, and believe it to be true upon the slightest evidence (a). A hair taken in the forest of Senlis by Charles VI. of France, bore a collar upon which was inscribed, *Cæsar has me devor'd* *. Every one believed that a Roman Emperor was meant, and that the beast must have lived at least a thousand years, overlooking that the Emperor of Germany is also styled *Cæsar*, and that it was not necessary to go back fifty years. This propensity displays itself even in childhood: stories of ghosts and apparitions are anxiously listened to; and firmly believed, by the terror they occasion: the vulgar accordingly have been captivated with such stories, upon evidence that would not be sufficient to ascertain the simplest fact. The absurd and childish prodigies that are every where scattered through the history of Titus Li-

* "Cæsar gave me this,"

(a) See Elements of Criticism, vol. i. p. 163. ed. 5.

vius, how to mention other ancient historians would be unaccountable in a writer of sense and gravity, were it not for the propensity mentioned. But human belief is not left at the mercy of every irregular bias : our maker has subjected belief to the correction of the rational faculty ; and accordingly, in proportion as reason advances toward maturity, wonders, prodigies, apparitions, incantations, witchcraft, and such stuff, lose their influence. That reformation however has been exceedingly slow, because the propensity is exceedingly strong. Such absurdities found credit among wise men, even as late as the last age. I am ready to verify the charge, by introducing two men of the first rank for understanding : were a greater number necessary, there would be no difficulty of making a very long catalogue. The celebrated Grotius shall lead the van. Procopius in his Vandal history relates, that some orthodox Christians, whose tongues were cut out by the Arians, continued miraculously to speak as formerly. And to vouch the fact, he appeals to some of those miraculous persons, alive in Constantinople at the time of his writing. In
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the dark ages of Christianity, when different sects were violently explained against each other, it is not surprising that gross absurdities were swallowed as natural miracles; but it is not surprising, and also mortifying, to find Grotius, the greatest genius of the age he lived in, adopting such absurdities. For the truth of the foregoing miracle, he appeals not only to Procopius, but to several other writers (a); as if the hearsay of a few writers were sufficient to make us believe an impossibility. Could he seriously be his opinion, that the great God who governs by general laws, permitting the sun to shine alike upon them of whatever religion, would miraculously suspend the laws of nature, in order to testify his displeasure at an heinous sect of Christians, led innocently into error? Did he also believe what Procopius adds, that two of these orthodox Christians were again deprived of speech, as a punishment inflicted by the Almighty for cohabiting with prostitutes?

I proceed to our famous historian, the Earl of Clarendon; the other person had in view. A man long in public business,

(a) Prolegomena to his History of the Goths.

a confirmed politician and well stored with knowledge from books as well as from experience, might be fortified against foolish miracles, if any man can be fortified and yet behold his superstitious credulity in childish stories; no less weak in that particular than was his cotemporary Grotius. He gravely relates an incident concerning the assassination of the Duke of Buckingham, the sum of which follows: "There were many stories scattered abroad at that time, of prophecies and predictions of the Duke's untimely and violent death; one of which was upon a better foundation of credit, than usually such discourses are founded upon. There was an officer in the King's wardrobe in Windsor castle, of reputation for honesty and discretion, and at that time about the age of fifty. About six months before the miserable end of the Duke, this man being in bed and in good health, there appeared to him at midnight a man of a venerable aspect, who drawing the curtains and fixing his eye upon him, said, Do you know me, Sir. The poor man, half dead with fear, answered, That he thought

" thought him to be Sir George Villiers,
 " father to the Duke. Upon which he
 " was ordered by the apparition, to go to
 " the Duke and tell him, that if he did
 " not somewhat to ingratiate himself with
 " the people, he would be suffered to live
 " but a short time. The same person ap-
 " peared to him a second and a third time,
 " reproaching him bitterly for not per-
 " forming his promise. The poor man
 " pluck'd up as much courage as to excuse
 " himself, that it was difficult to find ac-
 " ccess to the Duke, and that he would be
 " thought a madman. The apparition
 " imparted to him some secrets, which he
 " said would be his credentials to the
 " Duke. The officer, introduced to the
 " Duke by Sir Ralph Freeman, was receiv-
 " ed courteously. They walked together
 " near an hour; and the Duke sometimes
 " spoke with great commotion, tho' his
 " servants with Sir Ralph were at such a
 " distance that they could not hear a
 " word. The officer, returning from the
 " Duke, told Sir Ralph, that when he
 " mentioned the particulars that were to
 " gain him credit, the Duke's colour chan-
 " ged; and he swore the officer could
 " come

" come to that knowledge only by guess-
 " ing; for that these particulars were
 " known only to himself, and to one per-
 " son more, of whose fidelity he was se-
 " cure. The Duke who went to accom-
 " pany the King at hunting, was obli-
 " ged to ride all the morning in deep
 " thought; and before the morning was
 " spent, left the field and alighted at his
 " mother's house, with whom he was
 " shut up for two or three hours. When
 " the Duke left her, his countenance ap-
 " peared full of trouble, with a mixture
 " of anger, which never appeared before
 " in conversation with her: and she was
 " found overwhelmed with tears, and in
 " great agony. Whatever there was of
 " all this, is a notorious truth; that
 " when she heard of the Duke's murder,
 " she seemed not in the least surpris'd;
 " nor did express much sorrow."

The name of Lord Clarendon calls for
 more attention to the foregoing relation
 than otherwise it would deserve. It is no
 article of the Christian faith, that the dead
 preserve their connection with the living,
 or are ever suffered to return to this world:
 we have no solid evidence for such a fact;

and, rarely hear of it, except in tales for amusing, or terrifying children. Secondly, The story is inconsistent with the system of Providence; which, for the best purposes, has drawn an impenetrable veil between us, and futurity. Thirdly, This apparition, tho' supposed to be endowed with a miraculous knowledge of future events, is however deficient in the sagacity that belongs to a person of ordinary understanding. It appears twice to the officer, without thinking of giving him proper credentials; nor does it think of them till suggested by the officer. Fourthly, Why did not the apparition go directly to the Duke himself; what necessity for employing a third person? The Duke must have been much more affected with an apparition to himself, than with the hearing of it at second hand. The officer was afraid of being taken for a madman; and the Duke had some reason to think him such. Lastly, The apparition happened above three months before the Duke's death; and yet we hear not of a single step taken by him, in pursuance of the advice he got. The authority of the historian and the regard we owe him, have drawn from me

me the foregoing reflections, which with respect to the story itself are very little necessary; for the evidence is really not such as to verify any ordinary occurrence. His Lordship acknowledges, that he had no evidence but common report, saying, that it was one of the many stories scattered abroad at that time. He does not say, that the story was related to him by the officer, whose name he does not even mention, or by Sir Ralph Freeman, or by the Duke, or by the Duke's mother. If any thing happened like what is related, it may with good reason be supposed, that the officer was crazy or enthusiastically mad, and not have we any evidence beyond common report, that he communicated any secret to the Duke. Here are two remarkable instances of an observation made above, that a man may be high in one science and very low in another. Had Grotius, or had Clarendon, studied the fundamentals of reason and religion coolly and impartially, as they did other sciences, they would never have given faith to reports so ill-founded, and so contradictory to every sound principle of theology.

Another source of erroneous reasoning,

is a singular tendency in the mind of man to mysteries and hidden meanings. Where an object makes a deep impression, the busy mind is seldom satisfied with the simple and obvious intendment. Invention is roused to allegorize, and to pierce into hidden views and purposes. I have a notable example at hand, with respect to forms and ceremonies in religious worship. Josephus (a), talking of the tabernacle, has the following passage. "Let
 " any man, consider the structure of the
 " tabernacle, the sacerdotal vestments,
 " the vessels dedicated to the service of the
 " altar; and he must of necessity be convinced, that our lawgiver was a pious
 " man, and that all the clamours against
 " us and our profession, are mere calumny. For what are all of these but the
 " image of the whole world? This will
 " appear to any man who soberly and impartially examines the matter. The tabernacle of thirty cubits is divided into
 " three parts; two for the priests in general, and as free to them as the earth
 " and the sea; the third, where no mortal must be admitted, is as the heaven,

(a) Jewish Antiquities, book 3.

" reserved for God himself. The twelve
 " loaves of shew-bread signify the twelve
 " months of the year. The candlestick,
 " composed of seven branches, refers to
 " the twelve signs of the zodiac, through
 " which the seven planets shape their
 " course; and the seven lamps on the top
 " of the seven branches bear an analogy
 " to the planets themselves. The curtains
 " of four colours represent the four ele-
 " ments. The fine linen signifies the
 " earth, as flax is raised there. By the
 " purple is understood the sea, from the
 " blood of the murex, which dies that
 " colour. The violet colour is a symbol
 " of the air; and the scarlet of the fire.
 " By the linen garment of the high-
 " priest, is designed the whole body of the
 " earth: by the violet colour the heavens.
 " The pomegranates signify lightning:
 " the bells tolling signify thunder. The
 " four-coloured ephod bears a resem-
 " blance to the very nature of the uni-
 " verse, and the interweaving it with gold
 " has a regard to the rays of light. The
 " girdle about the body of the priest is as
 " the sea about the globe of the earth.
 " The two sardonyx stones are a kind of
 " figure

"figure of the sun and moon; and the
 "twelve other stones may be understood;
 "either of the twelve months, or of the
 "twelve signs in the zodiac. The vio-
 "let-coloured tiara is a resemblance of
 "heaven; and it would be irreverent to
 "have written the sacred name of God
 "upon any other colour. The triple
 "crown and plate of gold give us to un-
 "derstand the glory and majesty of Al-
 "mighty God. This is a plain illustra-
 "tion of these matters; and I would not
 "lose any opportunity of doing justice to
 "the honour and wisdom of our incom-
 "parable lawgiver. How, wire-drawn
 and how remote from any appearance of
 truth, are the foregoing allusions and im-
 imagined resemblances! But religious
 forms and ceremonies, however arbitrary,
 are never held to be so. If an useful pur-
 pose do not appear, it is taken for granted
 that there must be a hidden meaning;
 and any meaning, however childish, will
 serve when a better cannot be found.
 Such propensity there is in dark ages for
 allegorizing, that even our Saviour's mi-
 racles have not escaped. Where-ever any
 seeming difficulty occurs in the plain sense,

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the fathers of the church, Origen, Augustine, and Hilary, are never at a loss for a mystic meaning. "Sacrifice to the celestial gods with an odd number; and to the terrestrial gods with an even number," is a precept of Pythagoras. Another is, "stand round in adoring the gods, and sit down when thou hast worshipped." The dearest have a strange pother about the hidden meaning of these precepts. But, after all, have they any hidden meaning? Forms and ceremonies are useful in external worship, for occupying the vulgar; and it is of no importance what they be, provided they prevent the mind from wandering. Why such partiality to ancient ceremonies; when no hidden meaning is supposed in those of Christians, such as bowing to the east, or the priest performing the liturgy, partly in a black upper garment, partly in a white? No ideas are more simple than of numbers, nor less susceptible of any hidden meaning; and yet the profound Pythagoras has imagined many such meanings. The number *one*, says he, having no parts, represents the Deity: it represents also order, peace, and tranquillity, which result from unity of sentiment.

sentiment: The number *two* represents disorder, confusion, and change. He discovered in the number *three* the most sublime mysteries: all things are composed, says he, of three substances. The number *four* is holy in its nature, and constitutes the divine essence, which consists in unity, power, benevolence, and wisdom. Would one believe, that the great philosopher, who demonstrated the 47th proposition of the first book of *Euclid*, was the inventor of such childish conceits? Perhaps Pythagoras meant only to divert himself with them. Whether for or not, it seems difficult to be explained, how such trifles were preserved in memory, and handed down to us through so many generations. All that can be said is, that during the infancy of knowledge, every novelty makes a figure, and that it requires a long course of time to separate the corn from the chaff *. A certain writer, smit-

* The following precepts of the same philosopher, tho' now only fit for the *Child's Guide*, were originally cherished and preserved in memory, as emanations of superior wisdom. "Do not enter a temple for worship, but with a decent air. Ren-

ten with the conceit of hidden meanings, has applied his talent to the constellations of the zodiac. The *lion* typifies the force or heat of the sun in the month of July, when he enters that constellation. The constellation where the sun is in the month of August is termed the *virgin*, signifying the time of harvest. He enters the *balance* in September, denoting the equality of day and night. The *scorpion*, where he is found in October, is an emblem of the diseases that are frequent during that month, &c. The *balance*, I acknowledge, is well hit off; but I see not clearly the resemblance of the force of a lion to the heat of the sun; and, still less, that of harvest to a virgin: the spring would be more happily represented by a virgin, and the harvest by a woman in the act of delivery. Our tendency to mystery and allegory,

"der not life painful by undertaking too many affairs. Be always ready for what may happen.
"Never bind yourself by a vow, nor by an oath.
"Irritate not a man who is angry." The seven wise men of Greece made a figure in their time; but it would be unreasonable to expect, that what they taught during the infancy of knowledge, should make a figure in its maturity.

displays itself with great vigour in thinking of our forefathers and of the ancients in general, by means of the veneration that is paid them. Before writing was known, ancient history is made up of traditional fables. A Trojan Brutus peopled England; and the Scots are descended from Scota, daughter to an Egyptian king. Have we not equally reason to think, that the histories of the heathen gods are involved in fable? We pretend not to draw any hidden meaning from the former: why should we suspect any such meaning in the latter? Allegory is a species of writing too refined for a savage or barbarian: it is the fruit of a cultivated imagination; and was a late invention even in Greece. The allegories of Esop are of the simplest kind: yet they were composed after learning began to flourish; and Cebes, whose allegory about the life of man is justly celebrated, was a disciple of Socrates. Prepossession however in favour of the ancients makes us conclude, that there must be some hidden meaning or allegory in their historical fables; for no better reason than that they are destitute of common sense. In the Greek mythology, there
are

are numberless fables related as historical facts merely; witness the fable of gods mixing with women, and procreating giants, like what we find in the fabulous histories of many other nations. These giants attempt to dethrone Jupiter; Apollo keeps the sheep of Admetus: Minerva springs from the head of Jove*: Bacchus is cut out of his thigh: Orpheus goes to hell for his wife; Mars and Venus are caught by Vulcan in a net; and a thousand other such childish stories. But the Greeks, many centuries after the invention of such foolish fables, became illustrious for arts and sciences; and nothing would satisfy writers in later times, but to dub them profound philosophers, even when mere savages. Hence endless attempts to

* However easy it may be to draw an allegorical meaning out of that fable, I cannot admit any such meaning to have been intended. An allegory is a fable contrived to illustrate some acknowledged truth, by making a deeper impression than the truth would make in plain words; of which we have several beautiful instances in the Spectator (Elements of Criticism, chap. 20. § 6.). But the fable here was understood to be a matter of fact, Minerva being worshipped by the Greeks as a real goddess, the daughter of Jupiter without a mother.

direct of my senses and hidden meanings in
 their fables. Let other interpreters of
 that kind pass. They give me more concern.
 But I cannot, without the deepest concern,
 behold our illustrious philosopher Bacon
 employing his talents so absurdly. What
 imbecility must there be in human na-
 ture, when so great a genius is capable of
 such puerilities. As a subject for humbling
 is far from being agreeable, I confine my-
 self to a few instances. In an ancient
 fable, Prometheus formed man out of
 clay, and kindling a bundle of birch rods
 at the chariot of the sun, brought down
 fire to the earth for the use of his creature
 man. And that ungrateful man complain-
 ed to Jupiter of that theft, yet the god,
 pleased with the ingenuity of Prometheus,
 not only confirmed to man the use of fire,
 but conferred on him a gift much more
 considerable: the gift was perpetual
 youth, which was laid upon an ass to be
 carried to the earth. The ass, wanting to
 drink at a brook, was opposed by a ser-
 pent, who insisted to have the burden,
 without which, no drink for the poor ass.
 And thus, for a draught of plain water,
 was perpetual youth transferred from man

to the serpent. This fable has a striking resemblance to many in the Edda; and, in the manner of the Edda, accounts for the invention of fire, and for the mortality of man. Nor is there in all the Edda one more childish, or more distant from any appearance of a rational meaning. It is handled however by our philosopher with much solemn gravity, as if every source of wisdom were locked up in it. The explanation he gives, being too long to be copied here, shall be reduced to a few particulars. After an elogium upon fire, his Lordship proceeds thus. "The manner wherein Prometheus stole his fire, is properly described from the nature of the thing; he being said to have done it by applying a rod of birch to the chariot of the sun; for birch is used in striking and beating; which clearly denotes fire to proceed from violent percussions and collisions of bodies, whereby the matters struck are subtilized, rarefied, put into motion, and so prepared to receive the heat of the celestial bodies. And accordingly they, in a clandestine and secret manner, snatch fire, as it were by stealth, from the chariot

"behaviour of the sun." He goes on as follows to the next is a remarkable part of "the fable; which represents, that men, instead of gratitude, accused both Prometheus and his fire to Jupiter: and yet the accusation proved so pleasant to Jupiter, that he not only indulged mankind the use of fire, but conferred upon them perpetual youth. Here he may seem strange, that the sin of ingratitude should meet with approbation or reward. But the allegory has another view; and denotes, that the accusation both of human nature and human art, proceeds from a noble and laudable temper of mind, viz. modesty; and also tends to a very good purpose, viz. to stir up fresh industry and new discoveries." Can any thing be more wire-drawn than Vulcan, attempting the chastity of Minerva, had recourse to force. In the struggle, his *semen*, falling upon the ground, produced Erichonius; whose body from the middle upward was comely and well proportioned, his thighs and legs small and deformed like an eel. Conscious of that defect, he was the inventor of charriots; which showed the graceful part of his

his body, and concealed what was deformed. Listen to the explanation of this ridiculous fable: "Art, by the various uses it makes of fire, is here represented by Vulcan, and Nature is represented by Minerva, because of the industry employ'd in her works. Art, when it offers violence to Nature in order to bend her to its purpose, seldom attains the end proposed. Yet, upon great struggle and application, there proceed certain imperfect births, or lame abortive works; which however, with great pomp and deceitful appearances, are triumphantly carried about, and shown by impostors." I admit the ingenuity of that forc'd meaning; but had the inventor of that fable any latent meaning? If he had, why did he conceal it? The ingenious meaning would have merited praise; the fable itself none at all.

I shall add but one other instance, for they grow tiresome. Sphinx was a monster, having the face and voice of a virgin, the wings of a bird, and the talons of a gryphon. She resided on the summit of a mountain, near the city Thebes. Her manner was, to lie in ambush for travellers,

lers, to propose dark riddles which she received from the Muses, and to tear those to pieces who could not solve them: The Thebans having offered their kingdom to the man who should interpret these riddles, Oedipus presented himself before the monster, and he was required to explain the following riddle: "What creature is that, which being born four-footed, becomes afterwards two-footed, then three-footed, and lastly four-footed again. Oedipus answered, It was man, who in his infancy crawls upon his hands and feet, then walks upright upon his two feet, walks in old age with a stick, and at last lies four-footed in bed. Oedipus having thus obtained the victory, slew the monster; and laying the carcase upon an ass, carried it off in triumph. Now for the explanation.

" This is an elegant and instructive fable,
 " invented to represent science: for Sci-
 " ence may be called a monster, being
 " strangely gazed at and admired by the
 " ignorant. Her figure and form is va-
 " rious, by reason of the vast variety of
 " subjects that science considers. Her
 " voice and countenance are represented
 " female, by reason of her gay appear-
 " ance,

"ance, and wealth of speech. Wags
 " are added, because, the sciences and their
 " inventions fly about in a moment; for
 " knowledge, like light, communicated
 " from torch to torch, is presently catch-
 " ing, and rapidly diffused. Sharp, and
 " hooked axioms are elegantly attributed to
 " Socrates, because the axioms and arguments
 " of science fix down the mind, and keep
 " it from moving or slipping away." Again:
 " All science seems placed on
 " high, as it were on the tops of moun-
 " tains that are hard to climb; for sci-
 " ence is justly imagined, a sublime and
 " lofty thing, looking down upon igno-
 " rance, and at the same time taking an
 " extensive view on all sides, as is usual
 " on the tops of mountains. Sphinx is
 " said to propose difficult questions and
 " riddles, which she received from the
 " Muses. These questions, while they re-
 " main with the Muses, may be pleasant,
 " as contemplation and enquiry are when
 " knowledge is their only aim: but after
 " they are delivered to Sphinx, that is to
 " practice, which impels to action, choice,
 " and determination; then it is that they
 " become severe and torturing; and un-
 " less

“ less solved, strangely perplex the hu-
 “ man mind, and tear it to pieces. It is
 “ with the utmost elegance added in the
 “ fable, that the carcass of Sphinx was laid
 “ upon an afs; for there is nothing so sub-
 “ tile and abstruse, but after being made
 “ plain, may be conceived by the slowest
 “ capacity.” According to such latitude
 of interpretation, there is nothing more
 easy than to make *quidlibet ex quolibet*.

“ Who would not laugh if such a man there be ?

“ Who would not weep if Atticus were he ? ”

I will detain the reader but a moment
 longer, to hear what our author says in
 justification of such mysterious meaning.
 Out of many reasons, I select the two fol-
 lowing. “ It may pass for a farther in-
 “ dication of a concealed and secret mean-
 “ ing, that some of these fables are so ab-
 “ surd and idle in their narration, as to
 “ proclaim an allegory even afar off. A
 “ fable that carries probability with it, may
 “ be supposed invented for pleasure, or in
 “ imitation of history; but what could
 “ never be conceived or related in this
 “ way, must surely have a different use:
 “ For example, what a monstrous fiction
 “ is

" is this, That Jupiter should take *Metis*
 " to wife ; and as soon as he found her
 " pregnant eat her up ; whereby he also
 " conceived, and out of his head brought
 " forth *Pallas* armed ! Certainly no mor-
 " tal could, but for the sake of the moral
 " it couches, invent such an absurd dream
 " as this, so much out of the road of
 " thought." At that rate, the more ri-
 diculous or absurd a fable is, the more in-
 structive it must be. This opinion re-
 sembles that of the ancient Germans with
 respect to mad women, who were held to
 be so wise, as that every thing they utter-
 ed was prophetic. Did it never occur to
 our author, that in the infancy of the rea-
 soning faculty, the imagination is suffered
 to roam without control, as in a dream ;
 and that the vulgar in all ages are delight-
 ed with wonderful stories, the more out
 of nature, the more to their taste ?

We proceed to the other reason. " The
 " argument of most weight with me is,
 " That many of these fables appear not
 " to have been invented by the persons
 " who relate and divulge them, whether
 " *Homer*, *Hesiod*, or others ; for if I were
 " assured they first flowed from those la-

"ter times and authors, I should never
 "expect any thing singularly great or
 "noble from such an origin. But who-
 "ever attentively considers the thing, will
 "find, that these fables are delivered
 "down by those writers, not as matters
 "then first invented, but as received and
 "embraced in earlier ages. And this
 "principally raises my esteem of those fa-
 "bles; which I receive, not as the pro-
 "duct of the age, or invention of the po-
 "ets, but as sacred relics, gentle whif-
 "pers, and the breath of better times,
 "that from the traditions of more an-
 "cient nations, came at length into the
 "flutes and trumpets of the Greeks."

Was it our author's sincere opinion, that
 the farther back we trace the history of
 man, the more of science and knowledge
 is found; and consequently that savages
 are the most learned of all men?

The following fable of the savage Ca-
 nadians ought to be mysterious, if either
 of the reasons urged above be conclusive.
 "There were in the beginning but six
 "men in the world, (from whence sprung
 "is not said); one of these ascended to
 "heaven

“ heaven in quest of a woman named *A-tabentfic*, and had carnal knowledge of her. She being thrown headlong from the height of the empyrean, was received on the back of a tortoise, and delivered of two children, one of whom slew the other.” This fable is so absurd, that it must have a latent meaning; and one needs but copy our author to pump a deep mystery out of it, however little intended by the inventor. And if either absurdity or antiquity entitle fables to be held sacred relics, gentle whispers, and the breath of better times, the following Japanese fables are well entitled to these distinguishing epithets. “ Bunfio, in wedlock, having had no children for many years, addressed her prayers to the gods, was heard, and was delivered of 500 eggs. Fearing that the eggs might produce monsters, she packed them up in a box, and threw them into the river. An old fisherman finding the box, hatched the eggs in an oven, every one of which produced a child. The children were fed with boiled rice and mugwort-leaves; and being at last left to shift for themselves, they fell a-robbing on the highway.
Hearing

Hearing of a man famous for great wealth, they told their story at his gate, and begged some food. This happening to be the house of their mother, she own'd them for her children, and gave a great entertainment to her friends and neighbours. She was afterward inflist among the goddesses by the name of *Benfaiten*: her 500 sons were appointed to be her attendants; and to this day she is worshipped in Japan as the goddess of riches." Take another fable of the same stamp. The Japanese have a table of lucky and unlucky days, which they believe to have been composed by Abino Seimei, a famous astrologer, and a sort of demi-god. They have the following tradition of him. "A young fox, pursued by hunters, fled into a temple, and took shelter in the bosom of Abino Jassima, son and heir to the king of the country. Refusing to yield the poor creature to the unmerciful hunters, he defended himself with great bravery, and set the fox at liberty. The hunters, through resentment against the young prince, murdered his royal father; but Jassima revenged his father's death, killing the traitors with his own hand. Up-

on

on this signal victory, a lady of incomparable beauty appeared to him, and made such an impression on his heart, that he took her to wife. Abino Scimé, procreant of that marriage, was endowed with divine wisdom, and with the precious gift of prophecy. Jassima was ignorant that his wife was the very fox whose life he had saved, till she resumed by degrees her former shape." If there be any hidden mystery in this tale, I shall not despair of finding a mystery in every fairy-tale invented by Madam Gomez.

It is lamentable to observe the slow progress of human understanding and the faculty of reason. If this reflection be verified in our celebrated philosopher Bacon, how much more in others? It is comfortable, however, that human understanding is in a progress toward maturity, however slow. The fancy of allegorizing ancient fables, is now out of fashion: enlightened reason has unmasked these fables, and left them in their nakedness, as the invention of illiterate ages when wonder was the prevailing passion.

Having discussed the first two heads, I proceed to the third, viz. Erroneous reasoning

soning, occasioned by acquired biases. And one of these that has the greatest influence in perverting the rational faculty, is blind religious zeal. There is not in nature a system more simple or perspicuous than that of pure religion; and yet what a complication do we find in it of metaphysical subtilties and unintelligible jargon! That subject being too well known to need illustration, I shall confine myself to a few instances of the influence that religious superstition has on other subjects.

A history-painter and a player require the same sort of genius. The one by colours, the other by looks and gestures, express various modifications of passion, even what are beyond the reach of words; and to accomplish these ends, great sensibility is requisite, as well as judgement. Why then is not a player equally respected with a history-painter? It was thought by zealots, that a play is an entertainment too splendid for a mortified Christian; upon which account players fell under church-censure, and were even held unworthy of Christian burial. A history-painter, on the contrary, being frequently employ'd

in painting for the church, was always in high esteem. It is only among Protestants that players are beginning to be restored to their privileges as free citizens; and there perhaps never existed a history-painter more justly esteemed, than Garrick, a player, is in Great Britain. Aristarchus, having taught that the earth moves round the sun, was accused by the Heathen priests, for troubling the repose of their household-gods. Copernicus, for the same doctrine, was accused by Christian priests, as contradicting the scriptures, which talk of the sun's moving. And Galileo, for adhering to Copernicus, was condemned to prison and penance: he found it necessary to recant upon his knees. A bias acquired from Aristotle, kept reason in chains for centuries. Scholastic divinity in particular, founded on the philosophy of that author, was more hurtful to the reasoning faculty than the Goths and Huns. Tycho Braché suffered great persecution for maintaining, that the heavens were so far empty of matter as to give free course to the comets; contrary to Aristotle, who taught, that the heavens are harder than a diamond: it

was extremely ill taken, that a simple mortal should pretend to give Aristotle the lie. During the infancy of reason, authority is the prevailing argument*.

Reason is easily warped by habit. In the disputes among the Athenians about adjusting the form of their government, those who lived in the high country were for democracy; the inhabitants of the plains were for oligarchy; and the seamen for monarchy. Shepherds are all equal: in a corn-country, there are a few masters and many servants: on shipboard, there is one commander, and all the rest subjects. Habit was their adviser: none of them thought of confuting reason, in order to judge what was the best form

* Aristotle, it would appear, was less regarded by his cotemporaries than by the moderns. Some persons having travelled from Macedon all the way to Persia with complaints against Antipater; Alexander observed, that they would not have made so long a journey had they received no injury. And Cassander, son of Antipater, replying, that their long journey was an argument against them, trusting that witnesses would not be brought from such a distance to give evidence of their calumny. Alexander, smiling, said, "Your argument is one of Aristotle's sophisms, which will serve either side equally."

upon the whole. Habit of a different kind has an influence no less powerful. Persons who are in the habit of reasoning, require demonstration for every thing: even a self-evident proposition is not suffered to escape. Such demonstrations occur more than once in the Elements of Euclid, nor has Aristotle, with all his skill in logic, entirely avoided them. Can any thing be more self-evident, than the difference between pleasure and motion? Yet Aristotle attempts to demonstrate, that they are different. "No motion," says he, "except circular motion, is perfect in any one point of time; there is always something wanting during its course, and it is not perfected till it arrive at its end. But pleasure is perfect in every point of time; being the same from the beginning to the end." The difference is clear from perception: but instead of being clear from this demonstration, it should rather follow from it, that pleasure is the same with motion in a circle. Plato also attempts to demonstrate a self-evident proposition, that a quality is not a body. "Every body," says he, "is a subject: quality

O o 2

quality is not a subject, but an acci-
 dent. *ergo*, quality is not a body. As
 "again, All body cannot be a subject:
 or every quality is in a subject *ergo*, qual-
 ity is not a body." But Descartes affords
 the most illustrious instance of this kind.
 He was the greatest geometers of his age he
 lived in, and one of the greatest of any age,
 which indismissibly led him to overlook In-
 tuitive knowledge, and to admit no pro-
 position but what he demonstrated or pro-
 ved in the regular form of syllogism. He
 took a fancy to doubt even of his own ex-
 istence, till he was convinced of it by the
 following argument. *et Cogito, ergo sum.*
I think, therefore I am! And the sort
 of a demonstration is this after all. In
 the very fundamental proposition he ac-
 knowledges his existence by the term *I*;
 and how absurd is it, to imagine a proof
 necessary of what is admitted in the fun-
 damental proposition? In the next place,
 How does our author know that he
 thinks? If nothing is to be taken for
 granted, an argument is no less necessary
 to prove that he thinks, than to prove that
 he exists. It is true, that he has intuitive
 knowledge of his thinking; but has he
 not

not the same of his existing? Would not a man deserve to be laughed at, who, after warning himself at a fire, should imagine the following argument necessary to prove its existence, "The fire burns, ergo 'but exists!'" Listen to an author of high reputation attempting to demonstrate a self-evident proposition. "The labour of C cannot be the labour of B, because it is the application of the organs and powers of B, not of C, to the effecting of something; and therefore the labour is as much B's, as the *limbs* and *faculties* made use of are his. Again, the effect or produce of the labour of B, is not the effect of the labour of C: and therefore this effect or produce is B's, not C's; as much B's, as the labour was B's, and not C's: Because, what the labour of B causes or produces, B produces by his labour; or it is the product of B by his labour: that is, it is B's product, not C's, or any other's. And if C should pretend to any property in that which B can truly call his, he would act contrary to truth (a)." *say of*

In every subject of reasoning, to define

(a) Religion of Nature delineated, sect. 6 paragr. 2.

terms

terms is necessary in order to avoid mistakes; and the only possible way of defining a term, is to express its meaning in more simple terms. Terms expressing ideas that are simple without parts, admit not of being defined, because there are no terms more simple to express their meaning. To say that every term is capable of a definition, is in effect to say, that terms resemble matter; that as the latter is divisible without end, so the former is reducible into simpler terms without end. The habit however of defining is so inveterate in some men, that they will attempt to define words signifying simple ideas. Is there any necessity to define motion: do not children understand the meaning of the word? And how is it possible to define it, when there are not words more simple to define it by? Yet Worsler (a) attempts that bold task. "A continual change of place," says he, "or leaving one place for another, without remaining for any space of time in the same place, is called *motion*." That every body in motion is continually changing place, is true: but change of place is not

(a) Natural Philosophy, p. 31.

motion ;

motion; it is the effect of motion. Gravesend (a) defines motion thus, "Movere est translatio de loco in locum, five continua loci mutatio *;" which is the same with the former. Yet this very author admits *locus* or *place* to signify a simple idea, incapable of a definition. Is it more simple or more intelligible than motion? But, of all, the most remarkable definition of motion is that of Aristotle, famous for its impenetrability, or rather absurdity, "Actus entis in potentia, quatenus in potentia †." His definition of time is *numerus motus secundum prius ac posterius*. This definition as well as that of motion, may more properly be considered as riddles propounded for exercising invention. Not a few writers on algebra define negative quantities to be quantities less than nothing.

Extension enters into the conception of every particle of matter; because every

(a) Elements of Physics, p. 28.

* "Motion is, the removing from one place, to another, or a continual change of place."

† "The action of a being in power, so far as it is in power."

particle of matter has length, breadth, and thickness. Figure in the same manner enters into the conception of every particle of matter; because every particle of matter is bounded. By the power of abstraction, figure may be conceived independent of the body that is figured; and extension may be conceived independent of the body that is extended. These particulars are abundantly plain and obvious; and yet observe what a heap of jargon is employ'd by the followers of Leibnitz, in their fruitless endeavours to define extension. They begin with *simple existences*, which they say are unextended, and without parts. According to that definition, simple existences cannot belong to matter, because the smallest particle of matter has both parts and extension. But to let that pass, they endeavour to show as follows, how the idea of extension arises from these simple existences. " We
 " may look upon simple existences, as ha-
 " ving mutual relations with respect to
 " their internal state: relations that form
 " a certain order in their manner of exist-
 " ence. And this order or arrangement
 " of things, coexisting and linked toge-
 " ther

"there is it (light) we do not distinctly un-
 "derstand how causes in us a confused
 "idea, from whence arises the appearance
 "of extension." A Peripatetic philosopher
 being asked, What sort of things the sen-
 sible species of Aristotle are, answered,
 That they are neither entities nor nonen-
 tities, but something intermediate between
 the two. The famous astronomer, Isaac
 Barhadius, lays down the following propo-
 sition, and attempts a mathematical de-
 monstration of it, "That light is a mean
 "proportional between corporeal; sub-
 "stance and incorporeal." It closes with a curious sort of reasoning,
 singular indeed as not to come under
 any of the foregoing heads. The first edi-
 tions of the latest version of the Bible
 into English, have the following preface,
 "Another thing we think good to admo-
 "nition of, gentle reader, that we have
 "not tied ourselves to an uniformity of
 "phrasing, or to an identity of words,
 "as some peradventure would wish that
 "we had done, because they observe, that
 "some learned men somewhere have been
 "accused, as they could be that way. Truly,
 "that we might not vary from the sense
 Vol. III. P p of

“ of that which we have translated before,
“ if the word signified the same in both
“ places, (for there be some words that
“ be not of the same sense every where),
“ we were especially careful, and made a
“ conscience according to our duty. But
“ that we should express the same notion
“ in the same particular word; as, for
“ example, if we translate the Hebrew or
“ Greek word once by *purpose*, never to
“ call it *intent*; if one where *journeying*,
“ never *travelling*; if one where *think*,
“ never *suppose*; if one where *pain*, never
“ *ache*; if one where *joy*, never *gladness*,
“ &c.; thus to mince the matter, we
“ thought to favour more of curiosity than
“ wisdom, and that rather it would breed
“ scorn in the Atheist, than bring profit
“ to the godly reader. For is the king-
“ dom of God become words or syllables?
“ Why should we be in bondage to them,
“ if we may be free; use one precisely,
“ when we may use another, no less fit,
“ as commodiously? We might also be
“ charged by scoffers, with some unequal
“ dealing toward a great number of good
“ English words. For as it is written by
“ a certain great philosopher, that he
“ should

“ should say, that those logs were happy
“ that were made images to be worship-
“ ped ; for their fellows, as good as they,
“ lay for blocks behind the fire : so if we
“ should say, as it were, unto certain
“ words, Stand up higher, have a place
“ in the Bible always ; and to others of
“ like quality, Get ye hence, be banished
“ for ever, we might be taxed peradven-
“ ture with St James his words, namely,
“ to be partial in ourselves, and judges of
“ evil thoughts.” *Quæritur*, Can, this
translation be safely rely’d on as the
rule of faith, when such are the transla-
tors ?

A P P E N D I X.

IN reviewing the foregoing sketch, it occurred, that a fair analysis of Aristotle's logic, would be a valuable addition to the historical branch. A distinct and candid account of a system that for many ages governed the reasoning part of mankind, cannot but be acceptable to the public. Curiosity will be gratified, in seeing a phantom delineated that so long fascinated the learned world; a phantom, which shows infinite genius, but like the pyramids of Egypt or hanging gardens of Babylon, is absolutely useless unless for raising wonder. Dr Reid, professor of moral philosophy in the college of Glasgow, relished the thought; and his friendship to me prevailed on him, after much solicitation, to undertake the laborious task. No man is better acquainted with Aristotle's writings; and, without any enthusiastic attachment, he holds that philosopher to be a first-rate genius.

The

The logic of Aristotle has been on the decline more than a century ; and is at present relegated to schools and colleges. It has occasionally been criticised by different writers ; but this is the first attempt to draw it out of its obscurity into day-light. From what follows, one will be enabled to pass a true judgement on that work, and to determine whether it ought to make a branch of education. The Doctor's essay, as a capital article in the progress and history of the sciences, will be made welcome, even with the fatigue of squeezing through many thorny paths, before a distinct view can be got of that ancient and stupendous fabric.

It will at the same time shew the hurt that Aristotle has done to the reasoning faculty, by drawing it out of its natural course into devious paths. His artificial mode of reasoning, is no less superficial than intricate : I say, superficial ; for in none of his logical works, is a single truth attempted to be proved by syllogism that requires a proof : the propositions he undertakes to prove by syllogism, are all of them self-evident. Take for instance the following proposition, That man has a
power

power of self-motion. To prove this, he assumes the following axiom, upon which indeed every one of his syllogisms are founded, That whatever is true of a number of particulars joined together, holds true of every one separately; which is thus expressed in logical terms, Whatever is true of the genus, holds true of every species. Founding upon that axiom, he reasons thus; "All animals have a power of self-motion: man is an animal: *ergo*, "man has a power of self-motion." Now if all animals have a power of self-motion, it requires no argument to prove, that man, an animal, has that power: and therefore, what he gives as a conclusion or consequence, is not really so; it is not *inferred* from the fundamental proposition, but is *included* in it. At the same time, the self-motive power of man, is a fact that cannot be known but from experience; and it is more clearly known from experience than that of any other animal. Now, in attempting to prove man to be a self-motive animal, is it not absurd, to found the argument on a proposition less clear than that undertaken to be demonstrated? What is here observed, will be found

found applicable to the greater part, if not the whole, of his syllogisms.

Unless for the reason now given, it would appear singular, that Aristotle never attempts to apply his syllogistic mode of reasoning to any subject handled by himself: on ethics, on rhetoric, and on poetry, he argues like a rational being, without once putting in practice any of his own rules. It is not supposable that a man of his capacity could be ignorant, how insufficient a syllogism is for discovering any latent truth. He certainly intended his system of logic, chiefly if not solely, for disputation: and if such was his purpose, he has been wonderfully successful; for nothing can be better contrived for wrangling and disputing without end. He indeed in a manner professes this to be his aim, in his books *De Sophisticis elenchis*.

Some ages hence, when the goodly fabric of the Romish spiritual power shall be laid low in the dust, and scarce a vestige remain; it will among antiquaries be a curious enquiry, What was the nature and extent of a tyranny, more oppressive to the minds of men, than the tyranny of
ancient

ancient Rome was to their persons. During every step of the enquiry, posterity will rejoice over mental liberty, no less precious than personal liberty. The despotism of Aristotle with respect to the faculty of reason, was no less complete, than that of the Bishop of Rome with respect to religion; and it is now a proper subject of curiosity, to enquire into the nature and extent of that despotism. One cannot peruse the following sheets, without sympathetic pain for the weakness of man with respect to his noblest faculty; but that pain will redouble his satisfaction, in now being left free to the dictates of reason and common sense. In my reverie, I have more than once compared Aristotle's logic to a bubble made of soap water for amusing children, and beautiful figure with splendid colours, plain on the outside, empty within. It has for more than two thousand years been the hard fate of Aristotle's followers; Trojan like, to embrace a cloud for a goddess. — But this is more than sufficient for a preface; and I had almost forgot, that I am detaining my readers from better entertainment, in listening to Dr Reid.

**A Brief Account of ARISTOTLE'S
LOGIC. With REMARKS.**

C H A P. I.

Of the First Three Treatises.

SECT. I. *Of the Author.*

Aristotle had very uncommon advantages: born in an age when the philosophical spirit in Greece had long flourished, and was in its greatest vigour; brought up in the court of Macedon, where his father was the King's physician; twenty years a favourite scholar of Plato, and tutor to Alexander the Great; who both honoured him with his friendship, and supplied him with every thing necessary for the prosecution of his enquiries.

These advantages he improved by indefatigable study, and immense reading. He was the first, we know, says Strabo,

who composed a library. And in this the Egyptian and Pergamenian kings copied his example. As to his genius, it would be disrespectful to mankind, not to allow an uncommon share to a man who governed the opinions of the most enlightened part of the species, near two thousand years.

If his talents had been laid out solely for the discovery of truth and the good of mankind, his laurels would have remained for ever fresh: but he seems to have had a greater passion for fame than for truth, and to have wanted rather to be admired as the prince of philosophers than to be useful: so that it is dubious, whether there be in his character, most of the philosopher or of the sophist. The opinion of Lord Bacon is not without probability, That his ambition was as boundless as that of his royal pupil, the one aspiring at universal monarchy over the bodies and fortunes of men, the other over their opinions. If this was the case, it cannot be said, that the philosopher pursued his aim with less industry, less ability, or less success than the hero.

His writings carry too evident marks of

of that philosophical pride, vanity, and envy, which have often sullied the character of the learned. He determines boldly things above all human knowledge, and enters upon the most difficult questions, as his pupil entered on a battle, with full assurance of success. He delivers his decisions oracularly, and without any fear of mistake. Rather than confess his ignorance, he hides it under hard words and ambiguous expressions, of which his interpreters can make what they please. There is even reason to suspect, that he wrote often with affected obscurity, either that the air of mystery might procure greater veneration, or that his books might be understood only by the adepts who had been initiated in his philosophy.

His conduct towards the writers that went before him has been much censured. After the manner of the Ottoman princes, says Lord Verulam, he thought his throne could not be secure unless he killed all his brethren. Ludovicus Vives charges him with detracting from all philosophers, that he might derive that glory to himself, of which he robbed them. He rarely quotes an author but with a view to censure, and

is not very fair in representing the opinions which he treasures.

The faults we have mentioned are such as might be expected in a man, who had the daring ambition to be transmitted to all future ages as the prince of philosophers, as one who had carried every branch of human knowledge to its utmost limit; and who was not very scrupulous about the means he took to obtain his end.

We ought, however, to do him the justice to observe, that although the pride and vanity of the sophist appear too much in his writings in abstract philosophy; yet in natural history the fidelity of his narrations seems to be equal to his industry; and he always distinguishes between what he knew and what he had by report. And even in abstract philosophy, it would be unfair to impute to Aristotle all the faults, all the obscurities, and all the contradictions, that are to be found in his writings. The greatest part, and perhaps the best part, of his writings is lost. There is reason to doubt whether some of those we ascribe to him be really his; and whether what are his be not much vitiated and interpolated.

interpolated. These suspicions are justified by the fate of Aristotle's writings, which is judiciously related from the best authorities, in Bayle's dictionary, under the article *Pyrrhon*, to which I refer.

His books in logic which remain, are,
1. One book of the *Categories*. 2. One of interpretation. 3. *First Analytics*, two books. 4. *Second Analytics*, two books.

5. *Topics*, eight books. 6. *Of Sophisms*, one book. Diogenes Laertius

mentions many others that are lost. Those

I have mentioned have commonly been

published together, under the name of *A-*

ristotle's Organon, or his *Logics*; and for

many ages, *Porphyrus's Introduction to*

the Categories has been prefixed to them.

SECT. 2. *Of Porphyrus's Introduction.*

In this introduction, which is addressed

to *Chrysostomus*, the author observes, That

in order to understand Aristotle's doctrine

concerning the categories, it is necessary

to know what a *genus* is, what a *species*,

what a *specific difference*, what a *property*,

and what an *accident*; that the knowledge

of these is also very useful in definition, in

division,

division, and even in demonstration; therefore he proposes, in this little tract, to deliver shortly and simply the doctrine of the ancients, and chiefly of the Peripatetics, concerning these five *predicables*; avoiding the more intricate questions concerning them; such as, Whether *genera* and *species* do really exist in nature? or, Whether they are only conceptions of the human mind? If they exist in nature, Whether they are corporeal or incorporeal? and, Whether they are inherent in the objects of sense, or disjoined from them? These, he says, are very difficult questions, and require accurate discussion; but that he is not to meddle with them.

After this preface, he explains very minutely each of the five words above mentioned, divides and subdivides each of them, and then pursues all the agreements and differences between one and another through sixteen chapters.

SECT. 3. *Of the Categories.*

The book begins with an explication of what is meant by univocal words, what by

by equivocal, and what by denominative. Then it is observed, that what we say is either simple, without composition or structure, as *man, horse*; or, it has composition and structure, as, *a man fights, the horse runs*. Next comes a distinction between a subject of predication; that is, a subject of which any thing is affirmed or denied, and a subject of inherion. These things are said to be inherent in a subject, which although they are not a part of the subject, cannot possibly exist without it, as figure in the thing figured. Of things that are, says Aristotle, some may be predicated of a subject, but are in no subject; as *man* may be predicated of James or John, but is not in any subject. Some again are in a subject, but can be predicated of no subject. Thus, my knowledge in grammar is in me as its subject, but it can be predicated of no subject; because it is an individual thing. Some are both in a subject, and may be predicated of a subject, as science; which is in the mind as its subject, and may be predicated of geometry. Lastly, Some things can neither be in a subject, nor be predicated of any subject. Such are all individual substances,

stances, which cannot be predicated, because they are individuals; and cannot be in a subject, because they are substances. After some other subtilties about predicates and subjects, we come to the categories themselves; the things above mentioned being called by the schoolmen the *antepredicamenta*. It may be observed, however, that notwithstanding the distinction now explained, the *being in a subject*, and the *being predicated truly of a subject*, are in the Analytics used as synonymous phrases; and this variation of style has led some persons to think that the Categories were not written by Aristotle.

Things that may be expressed without composition or structure, are, says the author, reducible to the following heads. They are either *substance*, or *quantity*, or *quality*, or *relatives*, or *place*, or *time*, or *having*, or *doing*, or *suffering*. These are the predicaments or categories. The first four are largely treated of in four chapters; the others are slightly passed over, as sufficiently clear of themselves. As a specimen, I shall give a summary of what he says on the category of substance.

Substances are either primary, to wit,
 I individual

individual substances, or secondary, to wit, the genera and species of substances. Primary substances neither are in a subject, nor can be predicated of a subject; but all other things that exist, either are in primary substances, or may be predicated of them. For whatever can be predicated of that which is in a subject, may also be predicated of the subject itself. Primary substances are more substances than the secondary; and of the secondary, the species is more a substance than the genus. If there were no primary, there could be no secondary substances.

The properties of substance are these:

1. No substance is capable of intention or remission.
2. No substance can be in any other thing as its subject of inherence.
3. No substance has a contrary; for one substance cannot be contrary to another; nor can there be contrariety between a substance and that which is no substance.
4. The most remarkable property of substance, is, that one and the same substance may, by some change in itself, become the subject of things that are contrary. Thus, the same body may be at one time hot, at another cold.

Let this serve as a specimen of Aristotle's manner of treating the categories. After them, we have some chapters, which the schoolmen call *postprædicamenta*; wherein, first, the four kinds of opposition of terms are explained; to wit, *relative*, *privative*, of *contrariety*, and of *contradiction*. This is repeated in all systems of logic. Last of all we have distinctions of the four Greek words which answer to the Latin ones, *prius*, *simul*, *motus*, and *habere*.

SECT. 4. *Of the book concerning Interpretation.*

We are to consider, says Aristotle, what a noun is, what a verb, what affirmation, what negation, what speech. Words are the signs of what passeth in the mind; writing is the sign of words. The signs both of writing and of words are different in different nations, but the operations of mind signified by them are the same. There are some operations of thought which are neither true nor false. These are expressed by nouns or verbs singly, and without composition.

A noun is a sound which by compact signifies something without respect to time, and of which no part has signification by itself. The cries of beasts may have a natural signification, but they are not nouns: we give that name only to sounds which have their signification by compact. The cases of a noun, as the genitive, dative, are not nouns. *Non homo* is not a noun, but, for distinction's sake, may be called a *nomen infinitum*.

A verb signifies something by compact with relation to time. Thus *valet* is a verb; but *valetudo* is a noun, because its signification has no relation to time. It is only the present tense of the indicative that is properly called a verb; the other tenses and moods are variations of the verb. *Non valet* may be called a *verbum infinitum*.

Speech is sound significant by compact, of which some part is also significant. And it is either enunciative, or not enunciative. Enunciative speech is that which affirms or denies. As to speech which is not enunciative, such as a prayer or wish, the consideration of it belongs to oratory, or poetry. Every enunciative speech must have

a verb, or some variation of a verb. Affirmation is the enunciation of one thing concerning another. Negation is the enunciation of one thing from another. Contradiction is an affirmation and negation that are opposite. This is a summary of the first six chapters.

The seventh and eighth treat of the various kinds of enunciations or propositions, universal, particular, indefinite, and singular; and of the various kinds of opposition in propositions, and the axioms concerning them. These things are repeated in every system of logic. In the ninth chapter he endeavours to prove by a long metaphysical reasoning, that propositions respecting future contingencies are not, determinately, either true or false; and that if they were, it would follow, that all things happen necessarily, and could not have been otherwise than as they are. The remaining chapters contain many minute observations concerning the equipollency of propositions both pure and modal.

C H A P II.

Remarks.

SECT. I. *On the Five Predicables.*

THE writers on logic have borrowed their materials almost entirely from Aristotle's Organon, and Porphyry's Introduction. The Organon however was not written by Aristotle as one work. It comprehends various tracts, written without the view of making them parts of one whole, and afterwards thrown together by his editors under one name on account of their affinity. Many of his books that are lost, would have made a part of the Organon if they had been saved.

The three treatises of which we have given a brief account, are unconnected with each other, and with those that follow. And although the first was undoubtedly compiled by Porphyry and the two last probably by Aristotle, yet I consider
them

them as the venerable remains of a philosophy more ancient than Aristotle. Archytas of Tarentum, an eminent mathematician and philosopher of the Pythagorean school, is said to have wrote upon the ten categories ; and the five predicables probably had their origin in the same school. Aristotle, tho' abundantly careful to do justice to himself, does not claim the invention of either. And Porphyry, without ascribing the latter to Aristotle, professes only to deliver the doctrine of the ancients and chiefly of the Peripatetics, concerning them.

The writers on logic have divided that science into three parts ; the first treating of simple apprehension and of terms ; the second, of judgement and of propositions ; and the third, of reasoning and of syllogisms. The materials of the first part are taken from Porphyry's Introduction and the Categories ; and those of the second from the book of Interpretation.

A predicable, according to the grammatical form of the word, might seem to signify, whatever may be predicated, that is, affirmed or denied, of a subject : and in that sense every predicate would be a
predicable.

predicable. But logicians give a different meaning to the word. They divide propositions into certain classes, according to the relation which the predicate of the proposition bears to the subject. The first class is that wherein the predicate is the *genus* of the subject; as when we say, *This is a triangle, Jupiter is a planet*. In the second class, the predicate is a *species* of the subject; as when we say, *This triangle is right-angled*. A third class is when the predicate is the specific difference of the subject; as when we say, *Every triangle has three sides and three angles*. A fourth when the predicate is a property of the subject; as when we say, *The angles of every triangle are equal to two right angles*. And a fifth class is when the predicate is something accidental to the subject; as when we say, *This triangle is neatly drawn*.

Each of these classes comprehends a great variety of propositions, having different subjects, and different predicates; but in each class the relation between the predicate and the subject is the same. Now it is to this relation that logicians have given the name of a *predicable*. Hence it is, that
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altho' the number of predicates be infinite, yet the number of predicables can be no greater than that of the different relations which may be in propositions between the predicate and the subject. And if all propositions belong to one or other of the five classes above mentioned, there can be but five predicables, to wit, *genus*, *species*, *differentia*, *proprium*, and *accidens*. These might, with more propriety perhaps, have been called *the five classes of predicates*; but use has determined them to be called *the five predicables*.

It may also be observed, that as some objects of thought are individuals, such as, *Julius Cesar*, *the city Rome*; so others are common to many individuals, as *good*, *great*, *virtuous*, *vicious*. Of this last kind are all the things that are expressed by adjectives. Things common to many individuals, were by the ancients called *universals*. All predicates are universals, for they have the nature of adjectives; and, on the other hand, all universals may be predicates. On this account, universals may be divided into the same classes as predicates; and as the five classes of predicates

above mentioned have been called the five predicables, so by the same kind of phraseology they have been called *the five universals*; altho' they may more properly be called *the five classes of universals*.

The doctrine of the five universals or predicables makes an essential part of every system of logic, and has been handed down without any change to this day. The very name of *predicables* shews, that the author of this division, whoever he was, intended it as a complete enumeration of all the kinds of things that can be affirmed of any subject; and so it has always been understood. It is accordingly implied in this division, that all that can be affirmed of any thing whatever, is either the *genus* of the thing, or its *species*, or its *specific difference*, or some *property* or *accident* belonging to it.

Burgersdick, a very acute writer in logic, seems to have been aware, that strong objections might be made to the five predicables, considered as a complete enumeration: but, unwilling to allow any imperfection in this ancient division, he endeavours to restrain the meaning of the word *predicable*, so as to obviate objec-

tions. Those things only, says he, are to be accounted predicables, which may be affirmed of many individuals; truly, properly, and immediately. The consequence of putting such limitations upon the word *predicable* is, that in many propositions, perhaps in most, the predicate is not a predicable. But admitting all his limitations, the enumeration will still be very incomplete: for of many things we may affirm truly, properly, and immediately, their existence, their end, their cause, their effect, and various relations which they bear to other things. These, and perhaps many more, are predicables in the strict sense of the word, no less than the five which have been so long famous.

Altho' Porphyry and all subsequent writers, make the predicables to be, in number, five; yet Aristotle himself, in the beginning of the *Topics*, reduces them to four; and demonstrates, that there can be no more. We shall give his demonstration when we come to the *Topics*; and shall only here observe, that as Burgerfick justifies the fivefold division, by restraining the meaning of the word *predicable*; so Aristotle justifies the fourfold division,

division, by enlarging the meaning of the words *property* and *accident*.

After all, I apprehend, that this ancient division of predicables with all its imperfections, will bear a comparison with those which have been substituted in its stead by the most celebrated modern philosophers.

Locke, in his *Essay on the Human Understanding*, having laid it down as a principle, That all our knowledge consists in perceiving certain agreements and disagreements, between our ideas, reduces these agreements and disagreements to four heads; to wit, 1. Identity and diversity; 2. Relation; 3. Coexistence; 4. Real Existence (a). Here are four predicables, given as a complete enumeration, and yet not one of the ancient predicables is included in the number.

The author of the *Treatise of Human Nature*, proceeding upon the same principle, that all our knowledge is only a perception of the relations of our ideas, observes, "That it may perhaps be esteemed
" an endless task, to enumerate all those

(a) Book 4. chap. 1.

“ qualities which admit of comparison, and
 “ by which the ideas of philosophical re-
 “ lation are produced: but if we diligent-
 “ ly consider them, we shall find, that
 “ without difficulty they may be compri-
 “ sed under seven general heads: 1. Re-
 “ semblance; 2. Identity; 3. Relations of
 “ Space and Time; 4. Relations of Quan-
 “ tity and Number; 5. Degrees of Qua-
 “ lity; 6. Contrariety; 7. Causation (a).”

Here again are seven predicables given as a complete enumeration, wherein all the predicables of the ancients, as well as two of Locke's, are left out.

The ancients in their division attended only to categorical propositions which have one subject and one predicate; and of these, to such only as have a general term for their subject. The moderns, by their definition of knowledge, have been led to attend only to relative propositions, which express a relation between two subjects, and these subjects they suppose to be always ideas.

(a) Vol. 1. p. 33. and 125.

SECT. 2. *On the Ten Categories, and on Divisions in general.*

The intention of the categories or predicaments is, to muster every object of human apprehension under ten heads: for the categories are given as a complete enumeration of every thing which can be expressed without *composition* and *structure*; that is, of every thing that can be either the subject or the predicate of a proposition. So that as every soldier belongs to some company, and every company to some regiment; in like manner every thing that can be the object of human thought, has its place in one or other of the ten categories; and by dividing and subdividing properly the several categories, all the notions that enter into the human mind may be mustered in rank and file, like an army in the day of battle.

The perfection of the division of categories into ten heads, has been strenuously defended by the followers of Aristotle, as well as that of the five predicables. They are indeed of kin to each other;

ther: they breathe the same spirit, and probably had the same origin. By the one we are taught to marshal every term that can enter into a proposition, either as subject or predicate; and by the other, we are taught all the possible relations which the subject can have to the predicate. Thus, the whole furniture of the human mind is presented to us at one view, and contracted, as it were, into a nutshell. To attempt, in so early a period, a methodical delineation of the vast region of human knowledge, actual and possible, and to point out the limits of every district, was indeed magnanimous in a high degree, and deserves our admiration, while we lament that the human powers are unequal to so bold a flight.

A regular distribution of things under proper classes or heads, is, without doubt, a great help both to memory and judgment. As the philosopher's province includes all things human and divine that can be objects of enquiry, he is naturally led to attempt some general division, like that of the categories. And the invention of a division of this kind, which the speculative part of mankind acquiesced in, for

for two thousand years, marks a superiority of genius in the inventor, whoever he was. Nor does it appear, that the general divisions which, since the decline of the Peripatetic philosophy, have been substituted in place of the ten categories, are more perfect.

Locke has reduced all things to three categories; to wit, substances, modes, and relations. In this division, time, space, and number, three great objects of human thought, are omitted.

The author of the *Treatise of Human Nature* has reduced all things to two categories; to wit, ideas, and impressions: a division which is very well adapted to his system; and which puts me in mind of another made by an excellent mathematician in a printed thesis I have seen. In it the author, after a severe censure of the ten categories of the Peripatetics, maintains, that there neither are nor can be more than two categories of things; to wit, *data* and *quesita*.

There are two ends that may be proposed by such divisions. The first is, to methodize or digest in order what a man actually knows. This is neither unimportant

important nor impracticable; and in proportion to the solidity and accuracy of a man's judgement, his divisions of the things he knows, will be elegant and useful. The same subject may admit, and even require, various divisions, according to the different points of view from which we contemplate it: nor does it follow, that because one division is good, therefore another is naught. To be acquainted with the divisions of the logicians and metaphysicians, without a superstitious attachment to them, may be of use in dividing the same subjects, or even those of a different nature. Thus, Quintilian borrows from the ten categories his division of the topics of rhetorical argumentation. Of all methods of arrangement, the most antiphilosophical seems to be the invention of this age; I mean, the arranging the arts and sciences by the letters of the alphabet, in dictionaries and encyclopedies. With these authors the categories are, A, B, C, &c.

Another end commonly proposed by such divisions, but very rarely attained, is to exhaust the subject divided; so that nothing that belongs to it shall be omitted.

ted. It is one of the general rules of division in all systems of logic, That the division should be adequate to the subject divided: a good rule, without doubt; but very often beyond the reach of human power. To make a perfect division, a man must have a perfect comprehension of the whole subject at one view. When our knowledge of the subject is imperfect, any division we can make, must be like the first sketch of a painter, to be extended, contracted, or mended, as the subject shall be found to require. Yet nothing is more common, not only among the ancient, but even among modern philosophers, than to draw, from their incomplete divisions, conclusions which suppose them to be perfect.

A division is a repository which the philosopher frames for holding his ware in convenient order. The philosopher maintains, that such or such a thing is not good ware, because there is no place in his ware-room that fits it. We are apt to yield to this argument in philosophy, but it would appear ridiculous in any other traffic.

Peter Ramus, who had the spirit of a re-

former in philosophy, and who had force of genius sufficient to shake the Aristotelian fabric in many parts, but insufficient to erect any thing more solid in its place, tried to remedy the imperfection of philosophical divisions, by introducing a new manner of dividing. His divisions always consisted of two members, one of which was contradictory of the other; as if one should divide England into Middlesex and what is not Middlesex. It is evident that these two members comprehend all England: for the logicians observe, that a term along with its contradictory, comprehend all things. In the same manner, we may divide what is not Middlesex into Kent and what is not Kent. Thus one may go on by divisions and subdivisions that are absolutely complete. This example may serve to give an idea of the spirit of Ramean divisions, which were in no small reputation about two hundred years ago.

Aristotle was not ignorant of this kind of division. But he used it only as a touchstone to prove by induction the perfection of some other division, which indeed is the best use that can be made of it. When
applied

applied to the common purpose of division, it is both inelegant, and burdensome to the memory; and, after it has put one out of breath by endless subdivisions, there is still a negative term left behind, which shows that you are no nearer the end of your journey than when you began.

Until some more effectual remedy be found for the imperfection of divisions, I beg leave to propose one more simple than that of Ramus. It is this: When you meet with a division of any subject imperfectly comprehended, add to the last member an *et cetera*. That this *et cetera* makes the division complete, is undeniable; and therefore it ought to hold its place as a member, and to be always understood, whether expressed or not, until clear and positive proof be brought that the division is complete without it. And this same *et cetera* is to be the repository of all members that shall in any future time shew a good and valid right to a place in the subject.

SECT. 3. *On Distinctions.*

Having said so much of logical divi-

fiens, we shall next make some remarks upon distinctions.

Since the philosophy of Aristotle fell into disrepute, it has been a common topic of wit and raillery, to inveigh against metaphysical distinctions. Indeed the abuse of them in the scholastic ages, seems to justify a general prejudice against them: and shallow thinkers and writers have good reason to be jealous of distinctions, because they make sad work when applied to their flimsy compositions. But every man of true judgement, while he condemns distinctions that have no foundation in the nature of things, must perceive, that indiscriminately to decry distinctions, is to renounce all pretensions to just reasoning: for as false reasoning commonly proceeds from confounding things that are different; so without distinguishing such things, it is impossible to avoid error, or detect sophistry. The authority of Aquinas, or Suarez, or even of Aristotle, can neither stamp a real value upon distinctions of base metal, nor hinder the currency of those of true metal.

Some distinctions are verbal, others are real. The first kind distinguish the various

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ous meanings of a word; whether proper, or metaphorical. Distinctions of this kind make a part of the grammar of a language, and are often absurd when translated into another language. Real distinctions are equally good in all languages, and suffer no hurt by translation. They distinguish the different species contained under some general notion, or the different parts contained in one whole.

Many of Aristotle's distinctions are verbal merely; and therefore, more proper materials for a dictionary of the Greek language, than for a philosophical treatise. At least, they ought never to have been translated into other languages, when the idiom of the language will not justify them: for this is to adulterate the language, to introduce foreign idioms into it without necessity or use, and to make it ambiguous where it was not. The distinctions in the end of the Categories of the four words, *prius*, *simul*, *motus*, and *habere*, are all verbal.

The modes or species of *prius*, according to Aristotle, are five. One thing may be prior to another; first, in point of time; secondly, in point of dignity; thirdly, in point

point of order; and so forth. The modes of *simul* are only three. It seems this word was not used in the Greek with so great latitude as the other, although they are relative terms.

The modes or species of motion he makes to be fix, to wit, generation, corruption, increase, decrease, alteration, and change of place.

The modes or species of *having* are eight. 1. Having a quality or habit, as having wisdom. 2. Having quantity or magnitude. 3. Having things adjacent, as having a sword. 4. Having things as parts, as having hands or feet. 5. Having in a part or on a part, as having a ring on one's finger. 6. Containing, as a cask is said to have wine. 7. Possessing, as having lands or houses. 8. Having a wife.

Another distinction of this kind is Aristotle's distinction of causes; of which he makes four kinds, efficient, material, formal, and final. These distinctions may deserve a place in a dictionary of the Greek language; but in English or Latin they adulterate the language. Yet so fond were the schoolmen of distinctions of this kind, that they added to Aristotle's enumeration,

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an impulsive cause, an exemplary cause, and I don't know how many more. We seem to have adopted into English a final cause; but it is merely a term of art, borrowed from the Peripatetic philosophy, without necessity or use: for the English word *end* is as good as *final cause*, though not so long nor so learned.

SECT. 4. *On Definitions.*

It remains that we make some remarks on Aristotle's definitions, which have exposed him to much censure and ridicule. Yet I think it must be allowed, that in things which need definition and admit of it, his definitions are commonly judicious and accurate; and had he attempted to define such things only, his enemies had wanted great matter of triumph. I believe it may likewise be said in his favour, that until Locke's essay was wrote, there was nothing of importance delivered by philosophers with regard to definition, beyond what Aristotle has said upon that subject.

He considers a definition as a speech declaring

clarifying what a thing is. Every thing essential to the thing defined, and nothing more, must be contained in the definition. Now the essence of a thing consists of these two parts: First, What is common to it with other things of the same kind; and, secondly, What distinguishes it from other things of the same kind. The first is called the *genus* of the thing, the second its *specific difference*. The definition therefore consists of these two parts. And for finding them, we must have recourse to the ten categories; in one or other of which every thing in nature is to be found. Each category is a *genus*, and is divided into so many species, which are distinguished by their specific differences. Each of these species is again subdivided into so many species, with regard to which it is a *genus*. This division and subdivision continues until we come to the lowest species, which can only be divided into individuals, distinguished from one another, not by any specific difference, but by accidental differences of time, place, and other circumstances.

The category itself being the highest genus, is in no respect a species, and the

lowest *species* is in no respect a *genus*; but every intermediate order is a *genus* compared with those that are below it, and a *species* compared with those above it. To find the definition of any thing, therefore, you must take the *genus* which is immediately above its place in the category, and the *specific difference*, by which it is distinguished from other species of the same *genus*. These two make a perfect definition. This I take to be the substance of Aristotle's system; and probably the system of the Pythagorean school before Aristotle, concerning definition.

But notwithstanding the specious appearance of this system, it has its defects. Not to repeat what was before said of the imperfection of the division of things into ten categories, the subdivisions of each category are no less imperfect. Aristotle has given some subdivisions of a few of them; and as far as he goes, his followers pretty unanimously take the same road. But when they attempt to go farther, they take very different roads. It is evident, that if the series of each category could be completed, and the division of things into categories could be made perfect, still the

highest genus in each category could not be defined, because it is not a species ; nor could individuals be defined, because they have no specific difference. There are also many species of things, whose specific difference cannot be expressed in language, even when it is evident to sense, or to the understanding. Thus, green, red, and blue, are very distinct species of colour ; but who can express in words wherein green differs from red or blue ?

Without borrowing light from the ancient system, we may perceive, that every definition must consist of words that need no definition ; and that to define the common words of a language that have no ambiguity, is trifling, if it could be done ; the only use of a definition being to give a clear and adequate conception of the meaning of a word.

The logicians indeed distinguish between the definition of a word, and the definition of a thing ; considering the former as the mean office of a lexicographer, but the last as the grand work of a philosopher. But what they have said about the definition of a thing, if it have a meaning, is beyond my comprehension. All
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the rules of definition agree to the definition of a word ; and, if they mean by the definition of a thing, the giving an adequate conception of the nature and essence of any thing that exists ; this is impossible, and is the vain boast of men unconscious of the weakness of human understanding.

The works of God are but imperfectly known by us. We see their outside ; or perhaps we discover some of their qualities and relations, by observation and experiment assisted by reasoning ; but even of the simplest of them we can give no definition that comprehends its real essence. It is justly observed by Locke, that nominal essences only, which are the creatures of our own minds, are perfectly comprehended by us, or can be properly defined ; and even of these there are many too simple in their nature to admit of definition. When we cannot give precision to our notions by a definition, we must endeavour to do it by attentive reflection upon them, by observing minutely their agreements and differences, and especially by a right understanding of the powers of our own minds by which such notions are formed.

The principles laid down by Locke with regard to definition and with regard to the abuse of words, carry conviction along with them. I take them to be one of the most important improvements made in logic since the days of Aristotle: not so much because they enlarge our knowledge, as because they make us sensible of our ignorance; and shew that a great part of what speculative men have admired as profound philosophy, is only a darkening of knowledge by words without understanding.

If Aristotle had understood these principles, many of his definitions, which furnish matter of triumph to his enemies, had never seen the light: let us impute them to the times rather than to the man. The sublime Plato, it is said, thought it necessary to have the definition of a man, and could find none better than *Animal implume bipes*; upon which Diogenes sent to his school a cock with his feathers plucked off, desiring to know whether it was a man or not.

SECT.

SECT. 5. *On the Structure of Speech.*

The few hints contained in the beginning of the book concerning Interpretation relating to the structure of speech, have been left out in treatises of logic, as belonging rather to grammar; yet I apprehend this is a rich field of philosophical speculation. Language being the expressive image of human thought, the analysis of the one must correspond to that of the other. Nouns adjective and substantive, verbs active and passive, with their various moods, tenses, and persons, must be expressive of a like variety in the modes of thought. Things that are distinguished in all languages, such as substance and quality, action and passion, cause and effect, must be distinguished by the natural powers of the human mind. The philosophy of grammar, and that of the human understanding, are more nearly allied than is commonly imagined.

The structure of language was pursued to a considerable extent, by the ancient commentators upon this book of Aristotle. Their speculations upon this subject,
which

which are neither the least ingenious nor the least useful part of the Peripatetic philosophy, were neglected for many ages, and lay buried in ancient manuscripts, or in books little known, till they were lately brought to light by the learned Mr Harris in his *Hermes*.

The definitions given by Aristotle, of a noun, of a verb, and of speech, will hardly bear examination. It is easy in practice to distinguish the various parts of speech; but very difficult, if at all possible, to give accurate definitions of them.

He observes justly, that besides that kind of speech called a *proposition*, which is always either true or false, there are other kinds which are neither true nor false; such as, a prayer, or wish; to which we may add, a question, a command, a promise, a contract, and many others. These Aristotle pronounces to have nothing to do with his subject, and remits them to oratory, or poetry; and so they have remained banished from the regions of philosophy to this day: yet I apprehend, that an analysis of such speeches, and of the operations of mind which they express, would be of real use, and perhaps
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would discover how imperfect an enumeration the logicians have given of the powers of human understanding, when they reduce them to simple apprehension, judgement, and reasoning.

SECT. 6. *On Propositions.*

Mathematicians use the word *proposition* in a larger sense than logicians. A problem is called a *proposition* in mathematics, but in logic it is not a proposition: it is one of those speeches which are not enunciative, and which Aristotle remits to oratory or poetry.

A proposition, according to Aristotle, is a speech wherein one thing is affirmed or denied of another. Hence it is easy to distinguish the thing affirmed or denied, which is called *the predicate*, from the thing of which it is affirmed or denied, which is called *the subject*; and these two are called *the terms of the proposition*. Hence likewise it appears, that propositions are either affirmative or negative; and this is called *their quality*. All affirmative propositions have the same quality, so likewise have

have all negative ; but an affirmative and a negative are contrary in their quality.

When the subject of a proposition is a general term, the predicate is affirmed or denied, either of the whole, or of a part. Hence propositions are distinguished into universal and particular. *All men are mortal*, is an universal proposition ; *Some men are learned*, is a particular ; and this is called *the quantity of the proposition*. All universal propositions agree in quantity, as also all particular : but an universal and a particular are said to differ in quantity. A proposition is called *indefinite*, when there is no mark either of universality or particularity annexed to the subject : thus, *Man is of few days*, is an indefinite proposition ; but it must be understood either as universal or as particular, and therefore is not a third species, but by interpretation is brought under one of the other two.

There are also singular propositions, which have not a general term but an individual for their subject ; as, *Alexander was a great conqueror*. These are considered by logicians as universal, because, the subject being indivisible, the predicate

is affirmed or denied of the whole, and not of a part only. Thus all propositions, with regard to quality, are either affirmative or negative ; and with regard to quantity, are universal or particular ; and taking in both quantity and quality, they are universal affirmatives, or universal negatives, or particular affirmatives, or particular negatives. These four kinds, after the days of Aristotle, came to be named by the names of the four first vowels, A, E, I, O, according to the following distich :

Afferit A, negat E, sed universaliter amba ;

Afferit I, negat O, sed particulariter ambo.

When the young logician is thus far instructed in the nature of propositions, he is apt to think there is no difficulty in analysing any proposition, and shewing its subject and predicate, its quantity and quality ; and indeed, unless he can do this, he will be unable to apply the rules of logic to use. Yet he will find, there are some difficulties in this analysis, which are overlooked by Aristotle altogether ; and although they are sometimes touched, they are not removed by his followers. For, 1. There are propositions in which it is difficult to find a subject and

a predicate ; as in these, *It rains, It snows.*
2. In some propositions either term may be made the subject or the predicate as you like best ; as in this, *Virtue is the road to happiness.* 3. The same example may serve to shew, that it is sometimes difficult to say, whether a proposition be universal or particular. 4. The quality of some propositions is so dubious, that logicians have never been able to agree whether they be affirmative or negative ; as in this proposition, *Whatever is insentient is not an animal.* 5. As there is one class of propositions which have only two terms, to wit, one subject and one predicate, which are called *categorical propositions* ; so there are many classes that have more than two terms. What Aristotle delivers in this book is applicable only to categorical propositions ; and to them only the rules concerning the conversion of propositions, and concerning the figures and modes of syllogisms, are accommodated. The subsequent writers of logic have taken notice of some of the many classes of complex propositions, and have given rules adapted to them ; but finding this work endless, they have left us to manage the rest by the rules of common sense.

CHAP.

C H A P. III.

Account of the First Analytics.

SECT. I. *Of the Conversion of Propositions.*

IN attempting to give some account of the Analytics and of the Topics of Aristotle, ingenuity requires me to confess, that tho' I have often purposed to read the whole with care, and to understand what is intelligible, yet my courage and patience always failed before I had done. Why should I throw away so much time and painful attention upon a thing of so little real use? If I had lived in those ages when the knowledge of Aristotle's Organon intitled a man to the highest rank in philosophy, ambition might have induced me to employ upon it some years of painful study; and less, I conceive, would not be sufficient. Such reflections as these, always got the better of my resolution,

when the first ardor began to cool. All I can say is, that I have read some parts of the different books with care, some slightly, and some perhaps not at all. I have glanced over the whole often, and when any thing attracted my attention, have dipped into it till my appetite was satisfied. Of all reading it is the most dry and the most painful, employing an infinite labour of demonstration, about things of the most abstract nature, delivered in a laconic style, and often, I think, with affected obscurity; and all to prove general propositions, which when applied to particular instances appear self-evident.

There is probably but little in the Categories or in the book of Interpretation, that Aristotle could claim as his own invention: but the whole theory of syllogisms he claims as his own, and as the fruit of much time and labour. And indeed it is a stately fabric, a monument of a great genius, which we could wish to have been more usefully employed. There must be something however adapted to please the human understanding, or to flatter human pride, in a work which occupied men of speculation for more than a thousand years.

years. These books are called *Analytics*, because the intention of them is to resolve all reasoning into its simple ingredients.

The first book of the First Analytics, consisting of forty-six chapters, may be divided into four parts; the first treating of the conversion of propositions; the second, of the structure of syllogisms in all the different figures and modes; the third, of the invention of a middle term; and the last, of the resolution of syllogisms. We shall give a brief account of each.

To convert a proposition, is to infer from it another proposition, whose subject is the predicate of the first, and whose predicate is the subject of the first. This is reduced by Aristotle to three rules.

1. An universal negative may be converted into an universal negative: thus, *No man is a quadruped*; therefore, *No quadruped is a man*. 2. An universal affirmative can be converted only into a particular affirmative: thus, *All men are mortal*; therefore, *Some mortal beings are men*. 3. A particular affirmative may be converted into a particular affirmative: as, *Some men are just*; therefore, *Some just persons are men*. When a proposition may be converted

verted without changing its quantity, this is called *simple conversion*; but when the quantity is diminished, as in the universal affirmative, it is called conversion *per accidens*.

There is another kind of conversion, omitted in this place by Aristotle, but supplied by his followers, called *conversion by contraposition*, in which the term that is contradictory to the predicate is put for the subject, and the quality of the proposition is changed; as, *All animals are sentient*; therefore, *What is insentient is not an animal*. A fourth rule of conversion therefore is, That an universal affirmative, and a particular negative, may be converted by contraposition.

SECT. 2. *Of the Figures and Modes of pure Syllogisms.*

A syllogism is an argument, or reasoning, consisting of three propositions, the last of which, called *the conclusion*, is inferred from the two preceding, which are called *the premises*. The conclusion having two terms, a subject and a predicate, its
predicate

predicate is called the *major* term, and its subject the *minor* term. In order to prove the conclusion, each of its terms is, in the premises, compared with a third term, called the *middle* term. By this means one of the premises will have for its two terms the major term and the middle term; and this premise is called the *major* premise, or the *major* proposition of the syllogism. The other premise must have for its two terms the minor term and the middle term, and it is called the *minor* proposition. Thus the syllogism consists of three propositions, distinguished by the names of the *major*, the *minor*, and the *conclusion*: and altho' each of these has two terms, a subject and a predicate, yet there are only three different terms in all. The major term is always the predicate of the conclusion, and is also either the subject or predicate of the major proposition. The minor term is always the subject of the conclusion, and is also either the subject or predicate of the minor proposition. The middle term never enters into the conclusion, but stands in both premises, either in the position of subject or of predicate.

According

According to the various positions which the middle term may have in the premises, fyllogisms are said to be of various figures. Now all the possible positions of the middle term are only four: for, first, it may be the subject of the major proposition, and the predicate of the minor, and then the fyllogism is of the first figure; or it may be the predicate of both premises, and then the fyllogism is of the second figure; or it may be the subject of both, which makes a fyllogism of the third figure; or it may be the predicate of the major proposition, and the subject of the minor, which makes the fourth figure. Aristotle takes no notice of the fourth figure. It was added by the famous Galen, and is often called *the Galenical figure*.

There is another division of fyllogisms according to their modes. The mode of a fyllogism is determined by the quality and quantity of the propositions of which it consists. Each of the three propositions must be either an universal affirmative, or an universal negative, or a particular affirmative, or a particular negative. These four kinds of propositions, as was before observed, have been named by the four vowels,

A, E, I, O; by which means the mode of a fyllogism is marked by any three of those four vowels. Thus A, A, A, denotes that mode in which the major, minor, and conclusion, are all universal affirmatives; E, A, E, denotes that mode in which the major and conclusion are universal negatives, and the minor is an universal affirmative.

To know all the possible modes of fyllogism, we must find how many different combinations may be made of three out of the four vowels, and from the art of combination the number is found to be sixty-four. So many possible modes there are in every figure, consequently in the three figures of Aristotle there are one hundred and ninety-two, and in all the four figures two hundred and fifty-six.

Now the theory of fyllogism requires, that we shew what are the particular modes in each figure, which do, or do not, form a just and conclusive fyllogism, that so the legitimate may be adopted, and the spurious rejected. This Aristotle has shewn in the first three figures, examining all the modes one by one, and passing sentence upon each; and from this examination he

collects some rules which may aid the memory in distinguishing the false from the true, and point out the properties of each figure.

The first figure has only four legitimate modes. The major proposition in this figure must be universal, and the minor affirmative; and it has this property, that it yields conclusions of all kinds, affirmative and negative, universal and particular.

The second figure has also four legitimate modes. Its major proposition must be universal, and one of the premises must be negative. It yields conclusions both universal and particular, but all negative.

The third figure has six legitimate modes. Its minor must always be affirmative; and it yields conclusions both affirmative and negative, but all particular.

Besides the rules that are proper to each figure, Aristotle has given some that are common to all, by which the legitimacy of syllogisms may be tried. These may, I think, be reduced to five. 1. There must be only three terms in a syllogism. As each term occurs in two of the propositions, it must be precisely the same in both; if it be not, the syllogism is said to have

have four terms, which makes a vitious syllogism. 2. The middle term must be taken universally in one of the premises. 3. Both premises must not be particular propositions; nor both negative. 4. The conclusion must be particular, if either of the premises be particular; and negative, if either of the premises be negative. 5. No term can be taken universally in the conclusion, if it be not taken universally in the premises.

For understanding the second and fifth of these rules, it is necessary to observe, that a term is said to be taken universally, not only when it is the subject of an universal proposition, but when it is the predicate of a negative proposition; on the other hand, a term is said to be taken particularly, when it is either the subject of a particular, or the predicate of an affirmative proposition.

SECT. 3. *Of the Invention of a Middle Term.*

The third part of this book contains rules general and special for the invention of a middle term; and this the author

conceived to be of great utility. The general rules amount to this, That you are to consider well both terms of the proposition to be proved; their definition, their properties; the things which may be affirmed or denied of them, and those of which they may be affirmed or denied: these things collected together, are the materials from which your middle term is to be taken.

The special rules require you to consider the quantity and quality of the proposition to be proved, that you may discover in what mode and figure of syllogism the proof is to proceed. Then from the materials before collected, you must seek a middle term which has that relation to the subject and predicate of the proposition to be proved, which the nature of the syllogism requires. Thus, suppose the proposition I would prove is an universal affirmative, I know by the rules of syllogisms, that there is only one legitimate mode in which an universal affirmative proposition can be proved; and that is the first mode of the first figure. I know likewise, that in this mode both the premises must be universal affirmatives; and that the middle

the term must be the subject of the major, and the predicate of the minor. Therefore of the terms collected according to the general rule, I seek out one or more which have these two properties; first, That the predicate of the proposition to be proved can be universally affirmed of it; and secondly, That it can be universally affirmed of the subject of the proposition to be proved. Every term you can find which has those two properties, will serve you as a middle term, but no other. In this way, the author gives special rules for all the various kinds of propositions to be proved; points out the various modes in which they may be proved, and the properties which the middle term must have to make it fit for answering that end. And the rules are illustrated, or rather, in my opinion, purposely darkened, by putting letters of the alphabet for the several terms.

SECT. 4. *Of the remaining part of the First Book.*

The resolution of syllogisms requires no other principles but these before laid down
for

for constructing them. However it is treated of largely, and rules laid down for reducing reasoning to fyllogifms, by fupplying one of the premisses when it is understood, by rectifying inverfions, and putting the propofitions in the proper order.

Here he fpeaks alfo of hypothetical fyllogifms; which he acknowledges cannot be refolved into any of the figures, although there be many kinds of them that ought diligently to be obferved; and which he promifes to handle afterwards. But this promife is not fulfilled, as far as I know, in any of his works that are extant.

SECT. 5. *Of the Second Book of the First Analytics.*

The fecond book treats of the powers of fyllogifms, and fhow, in twenty-feven chapters, how we may perform many feats by them, and what figures and modes are adapted to each. Thus, in fome fyllogifms feveral diftinct conclufions may be drawn from the fame premisses: in fome, true

true conclusions may be drawn from false premises: in some, by assuming the conclusion and one premise, you may prove the other; you may turn a direct syllogism into one leading to an absurdity.

We have likewise precepts given in this book, both to the assailant in a syllogistical dispute, how to carry on his attack with art, so as to obtain the victory; and to the defendant, how to keep the enemy at such a distance as that he shall never be obliged to yield. From which we learn, that Aristotle introduced in his own school, the practice of syllogistical disputation, instead of the rhetorical disputations which the sophists were wont to use in more ancient times.

C H A P IV.

Remarks.

SECTION I. *Of the Conversion of Propositions.*

WE have given a summary view of the theory of pure syllogisms as delivered by Aristotle, a theory of which he claims

claims the sole invention. And I believe it will be difficult, in any science, to find so large a system of truths of so very abstract and so general a nature, all fortified by demonstration, and all invented and perfected by one man. It shows a force of genius and labour of investigation, equal to the most arduous attempts. I shall now make some remarks upon it.

As to the conversion of propositions, the writers on logic commonly satisfy themselves with illustrating each of the rules by an example, conceiving them to be self-evident when applied to particular cases. But Aristotle has given demonstrations of the rules he mentions. As a specimen, I shall give his demonstration of the first rule. "Let A B be an universal negative proposition; I say, that if A is in no B, it will follow that B is in no A. If you deny this consequence, let B be in some A, for example, in C; then the first supposition will not be true; for C is of the B's." In this demonstration, if I understand it, the third rule of conversion is assumed, that if B is in some A, then A must be in some B, which indeed is contrary to the first supposition. If
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the

the third rule be assumed for proof of the first, the proof of all the three goes round in a circle; for the second and third rules are proved by the first. This is a fault in reasoning which Aristotle condemns, and which I would be very unwilling to charge him with, if I could find any better meaning in his demonstration. But it is indeed a fault very difficult to be avoided, when men attempt to prove things that are self-evident.

The rules of conversion cannot be applied to all propositions, but only to those that are categorical; and we are left to the direction of common sense in the conversion of other propositions. To give an example: Alexander was the son of Philip; therefore Philip was the father of Alexander: A is greater than B; therefore B is less than A. These are conversions which, as far as I know, do not fall within any rule in logic; nor do we find any loss for want of a rule in such cases.

Even in the conversion of categorical propositions, it is not enough to transpose the subject and predicate. Both must undergo some change, in order to fit them for their new station: for in every proposition

position the subject must be a substantive, or have the force of a substantive; and the predicate must be an adjective, or have the force of an adjective. Hence it follows, that when the subject is an individual, the proposition admits not of conversion. How, for instance, shall we convert this proposition, God is omniscient?

These observations show, that the doctrine of the conversion of propositions is not so complete as it appears. The rules are laid down without any limitation; yet they are fitted only to one class of propositions, to wit, the categorical; and of these only to such as have a general term for their subject.

SECT. 2. *On Additions made to Aristotle's Theory.*

Although the logicians have enlarged the first and second parts of logic, by explaining some technical words and distinctions which Aristotle has omitted, and by giving names to some kinds of propositions which he overlooks; yet in what concerns the theory of categorical syllogisms,

gisms, he is more full, more minute and particular, than any of them: so that they seem to have thought this capital part of the Organon rather redundant than deficient.

It is true, that Galen added a fourth figure to the three mentioned by Aristotle. But there is reason to think that Aristotle omitted the fourth figure, not through ignorance or inattention, but of design, as containing only some indirect modes, which, when properly expressed, fall into the first figure.

It is true also, that Peter Ramus, a professed enemy of Aristotle, introduced some new modes that are adapted to singular propositions; and that Aristotle takes no notice of singular propositions, either in his rules of conversion, or in the modes of syllogism. But the friends of Aristotle have shewn, that this improvement of Ramus is more specious than useful. Singular propositions have the force of universal propositions, and are subject to the same rules. The definition given by Aristotle of an universal proposition applies to them; and therefore he might think,

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that

that there was no occasion to multiply the modes of syllogism upon their account.

These attempts, therefore, show rather inclination than power, to discover any material defect in Aristotle's theory.

The most valuable addition made to the theory of categorical syllogisms, seems to be the invention of those technical names given to the legitimate modes, by which they may be easily remembered, and which have been comprised in these barbarous verses,

*Barbara, Celarent, Darii, Ferio, dato primæ;
Cesare, Camestres, Festino, Baroco, secundæ;
Tertia grande sonans recitat Darapti, Felapton,
Adjungens Disamis, Datifi, Bocardo, Ferison.*

In these verses, every legitimate mode belonging to the three figures has a name given to it, by which it may be distinguished and remembered. And this name is so contrived as to denote its nature: for the name has three vowels, which denote the kind of each of its propositions.

Thus, a syllogism in *Bocardo* must be made up of the propositions denoted by the three vowels, O, A, O; that is, its major and conclusion must be particular negative propositions, and its minor an universal

niversal affirmative ; and being in the third figure, the middle term must be the subject of both premises.

This is the mystery contained in the vowels of those barbarous words. But there are other mysteries contained in their consonants : for, by their means, a child may be taught to reduce any syllogism of the second or third figure to one of the first. So that the four modes of the first figure being directly proved to be conclusive, all the modes of the other two are proved at the same time, by means of this operation of reduction. For the rules and manner of this reduction, and the different species of it, called *offensive* and *per impossibile*, I refer to the logicians, that I may not disclose all their mysteries.

The invention contained in these verses is so ingenious, and so great an adminicle to the dextrous management of syllogisms, that I think it very probable that Aristotle had some contrivance of this kind, which was kept as one of the secret doctrines of his school, and handed down by tradition, until some person brought it to light. This is offered only as a conjecture, leaving it to those who are better acquainted

quainted with the most ancient commentators on the Analytics, either to refute or to confirm it.

SECT. 3. *On Examples used to illustrate this Theory.*

We may observe, that Aristotle hardly ever gives examples of real syllogisms to illustrate his rules. In demonstrating the legitimate modes, he takes A, B, C, for the terms of the syllogism. Thus, the first mode of the first figure is demonstrated by him in this manner. "For," says he, "if A is attributed to every B, and B to every C, it follows necessarily, that A may be attributed to every C." For disproving the illegitimate modes, he uses the same manner; with this difference, that he commonly for an example gives three real terms, such as, *bonum*, *habitus*, *prudens*; of which three terms you are to make up a syllogism of the figure and mode in question, which will appear to be inconclusive.

The commentators and systematical writers in logic, have supplied this defect; and

and given us real examples of every legitimate mode in all the figures. We acknowledge this to be charitably done, in order to assist the conception in matters so very abstract; but whether it was prudently done for the honour of the art, may be doubted. I am afraid this was to uncover the nakedness of the theory: it has undoubtedly contributed to bring it into contempt; for when one considers the silly and uninformative reasonings that have been brought forth by this grand organ of science, he can hardly forbear crying out, *Parturiunt montes, et nascitur ridiculus mus*. Many of the writers of logic are acute and ingenious, and much practised in the syllogistical art; and there must be some reason why the examples they have given of syllogisms are so lean.

We shall speak of the reason afterwards; and shall now give a syllogism in each figure as an example.

No work of God is bad;

The natural passions and appetites of men are the work of God;

Therefore none of them is bad.

In this syllogism, the middle term, *work of God*, is the subject of the major and
the

the predicate of the minor ; so that the fyllogism is of the first figure. The mode is that called *Celarent* ; the major and conclusion being both universal negatives ; and the minor an universal affirmative. It agrees to the rules of the figure, as the major is universal, and the minor affirmative ; it is also agreeable to all the general rules ; so that it maintains its character in every trial. And to shew of what ductile materials fyllogisms are made, we may, by converting simply the major proposition, reduce it to a good fyllogism of the second figure, and of the mode *Cesare*, thus :

Whatever is bad is not the work of God ;

All the natural passions and appetites of men are the work of God ;

Therefore they are not bad.

Another example :

Every thing virtuous is praise-worthy ;

Some pleasures are not praise-worthy ;

Therefore some pleasures are not virtuous.

Here the middle term *praise-worthy* being the predicate of both premises, the fyllogism is of the second figure ; and seeing it is made up of the propositions, A,

O, O, the mode is *Baroco*. It will be found to agree both with the general and special rules: and it may be reduced into a good fyllogism of the first figure upon converting the major by contraposition, thus:

What is not praise-worthy is not virtuous;

Some pleasures are not praise-worthy;

Therefore some pleasures are not virtuous.

That this fyllogism is conclusive, common sense pronounces, and all logicians must allow; but it is somewhat unpleasing to rules, and requires a little straining to make it tally with them.

That it is of the first figure is beyond dispute; but to what mode of that figure shall we refer it? This is a question of some difficulty. For, in the first place, the premises seem to be both negative, which contradicts the third general rule; and moreover, it is contrary to a special rule of the first figure, That the minor should be negative. These are the difficulties to be removed.

Some logicians think, that the two negative particles in the major are equivalent

to an affirmative ; and that therefore the major proposition, *What is not praise-worthy, is not virtuous*, is to be accounted an affirmative proposition. This, if granted, solves one difficulty ; but the other remains. The most ingenious solution, therefore, is this : Let the middle term be *not praise-worthy*. Thus, making the negative particle a part of the middle term, the syllogism stands thus :

Whatever is *not praise-worthy* is not virtuous ;

Some pleasures are *not praise-worthy* ;

Therefore some pleasures are not virtuous.

By this analysis, the major becomes an universal negative, the minor a particular affirmative, and the conclusion a particular negative, and so we have a just syllogism in *Ferio*.

We see, by this example, that the quality of propositions is not so invariable, but that, when occasion requires, an affirmative may be degraded into a negative, or a negative exalted to an affirmative.

Another example :

All Africans are black ;

All Africans are men ;

Therefore

Therefore some men are black.

This is of the third figure, and of the mode *Darapti*; and it may be reduced to *Darii* in the first figure, by converting the minor.

All Africans are black;

Some men are Africans;

Therefore some men are black.

By this time I apprehend the reader has got as many examples of fyllogifims as will stay his appetite for that kind of entertainment.

SECT. 4. *On the Demonstration of the Theory.*

Aristotle and all his followers have thought it necessary, in order to bring this theory of categorical fyllogifims to a science, to demonstrate, both that the fourteen authoris'd modes conclude justly, and that none of the rest do. Let us now see how this has been executed.

As to the legitimate modes, Aristotle and those who follow him the most closely, demonstrate the four modes of the first figure directly from an axiom called the

Dictum de omni et nullo. The amount of the axiom is, (That) what is affirmed of a whole genus, may be affirmed of all the species and individuals belonging to that genus; and that what is denied of the whole genus, may be denied of its species and individuals. The four modes of the first figure are evidently included in this axiom. And as to the legitimate modes of the other figures, they are proved by reducing them to some mode of the first. Nor is there any other principle assumed in these reductions but the axioms concerning the conversion of propositions, and in some cases the axioms concerning the opposition of propositions.

As to the illegitimate modes, Aristotle has taken the labour to try and condemn them one by one in all the three figures: but this is done in such a manner that it is very painful to follow him. To give a specimen, In order to prove, that those modes of the first figure in which the major is particular, do not conclude, he proceeds thus: "If A is or is not in some B,
 " and B in every C, no conclusion follows.
 " Take for the terms in the affirmative
 " case, *good, habit, prudence*; in the negative,
 " *tive,*

“tive, good, habit, ignorance.” This laconic style, the use of symbols not familiar, and, in place of giving an example, his leaving us to form one from three assigned terms, give such embarrassment to a reader, that he is like one reading a book of riddles.

Having thus ascertained the true and false modes of a figure, he subjoins the particular rules of that figure, which seem to be deduced from the particular cases before determined. The general rules come last of all, as a general corollary from what goes before.

I know not whether it is from a diffidence of Aristotle's demonstrations, or from an apprehension of their obscurity, or from a desire of improving upon his method, that almost all the writers in logic I have met with, have inverted his order, beginning where he ends, and ending where he begins. They first demonstrate the general rules, which belong to all the figures, from three axioms; then from the general rules and the nature of each figure, they demonstrate the special rules of each figure. When this is done, nothing remains but to apply these general and
special

special rules, and to reject every mode which contradicts them.

This method has a very scientific appearance; and when we consider, that by a few rules once demonstrated, an hundred and seventy-eight false modes are destroyed at one blow, which Aristotle had the trouble to put to death one by one, it seems to be a great improvement. I have only one objection to the three axioms.

The three axioms are these: 1. Things which agree with the same third, agree with one another. 2. When one agrees with the third, and the other does not, they do not agree with one another. 3. When neither agrees with the third, you cannot thence conclude, either that they do, or do not agree with one another. If these axioms are applied to mathematical quantities, to which they seem to relate when taken literally, they have all the evidence that an axiom ought to have: but the logicians apply them in an analogical sense to things of another nature. In order, therefore, to judge whether they are truly axioms, we ought to strip them of their figurative dress, and to set them down in plain English, as the logicians understand

understand them. They amount therefore to this. 1. If two things be affirmed of a third, or the third be affirmed of them; or if one be affirmed of the third, and the third affirmed of the other; then they may be affirmed one of the other. 2. If one is affirmed of the third, or the third of it, and the other denied of the third, or the third of it, they may be denied one of the other. 3. If both are denied of the third, or the third of them; or if one is denied of the third, and the third denied of the other; nothing can be inferred.

When the three axioms are thus put in plain English, they seem not to have that degree of evidence which axioms ought to have; and if there is any defect of evidence in the axioms, this defect will be communicated to the whole edifice raised upon them.

It may even be suspected, that an attempt by any method to demonstrate that a syllogism is conclusive, is an impropriety somewhat like that of attempting to demonstrate an axiom. In a just syllogism, the connection between the premises and the conclusion is not only real, but
immediate;

immediate ; so that no proposition can come between them to make their connection more apparent. The very intention of a fyllogifin is, to leave nothing to be supplied that is necessary to a complete demonstration. Therefore a man of common understanding who has a perfect comprehension of the premifes, finds himself under a necessity of admitting the conclusion, fupposing the premifes to be true ; and the conclusion is connected with the premifes with all the force of intuitive evidence. In a word, an immediate conclusion is feen in the premifes, by the light of common fenfe ; and where that is wanting, no kind of reasoning will fupply its place.

SECT. 5. *On this Theory, confidered as an Engine of Science.*

The flow progress of useful knowledge, during the many ages in which the fyllogistic art was most highly cultivated as the only guide to science, and its quick progress since that art was difused, suggest a presumption against it ; and this presumption

tion is strengthened by the puerility of the examples which have always been brought to illustrate its rules.

The ancients seem to have had too high notions, both of the force of the reasoning power in man, and of the art of syllogism as its guide. Mere reasoning can carry us but a very little way in most subjects. By observation, and experiments properly conducted, the stock of human knowledge may be enlarged without end; but the power of reasoning alone, applied with vigour through a long life, would only carry a man round, like a horse in a mill who labours hard but makes no progress. There is indeed an exception to this observation in the mathematical sciences. The relations of quantity are so various and so susceptible of exact mensuration, that long trains of accurate reasoning on that subject may be formed, and conclusions drawn very remote from the first principles. It is in this science and those which depend upon it, that the power of reasoning triumphs; in other matters its trophies are inconsiderable. If any man doubt this, let him produce, in any subject unconnected with mathematics, a train

of reasoning of some length, leading to a conclusion, which without this train of reasoning would never have been brought within human sight. Every man acquainted with mathematics can produce thousands of such trains of reasoning. I do not say, that none such can be produced in other sciences; but I believe they are few, and not easily found; and that if they are found, it will not be in subjects that can be expressed by categorical propositions, to which alone the theory of figure and mode extends.

In matters to which that theory extends, a man of good sense, who can distinguish things that differ, can avoid the snares of ambiguous words, and is moderately practised in such matters, sees at once all that can be inferred from the premises; or finds, that there is but a very short step to the conclusion.

When the power of reasoning is so feeble by nature, especially in subjects to which this theory can be applied, it would be unreasonable to expect great effects from it. And hence we see the reason why the examples brought to illustrate it
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by the most ingenious logicians, have rather tended to bring it into contempt.

If it should be thought, that the syllogistic art may be an useful engine in mathematics, in which pure reasoning has ample scope: First, It may be observed, That facts are unfavourable to this opinion: for it does not appear, that Euclid, or Apollonius, or Archimedes, or Hugen, or Newton, ever made the least use of this art; and I am even of opinion, that no use can be made of it in mathematics. I would not wish to advance this rashly, since Aristotle has said, that mathematicians reason for the most part in the first figure. What led him to think so was, that the first figure only yields conclusions that are universal and affirmative, and the conclusions of mathematics are commonly of that kind. But it is to be observed, that the propositions of mathematics are not categorical propositions, consisting of one subject and one predicate. They express some relation which one quantity bears to another, and on that account must have three terms. The quantities compared make two, and the relation between them is a third. Now to such pro-

positions we can neither apply the rules concerning the conversion of propositions, nor can they enter into a syllogism of any of the figures or modes. We observed before, that this conversion, *A is greater than B, therefore B is less than A*, does not fall within the rules of conversion given by Aristotle or the logicians; and we now add, that this simple reasoning, *A is equal to B, and B to C; therefore A is equal to C*, cannot be brought into any syllogism in figure and mode. There are indeed syllogisms into which mathematical propositions may enter, and of such we shall afterwards speak: but they have nothing to do with the system of figure and mode.

When we go without the circle of the mathematical sciences, I know nothing in which there seems to be so much demonstration as in that part of logic which treats of the figures and modes of syllogism; but the few remarks we have made, shew, that it has some weak places: and besides, this system cannot be used as an engine to rear itself.

The compass of the syllogistic system as an engine of science, may be discerned by

a compendious and general view of the conclusion drawn, and the argument used to prove it, in each of the three figures.

In the first figure, the conclusion affirms or denies something of a certain species or individual ; and the argument to prove this conclusion is, That the same thing may be affirmed or denied of the whole genus to which that species or individual belongs.

In the second figure, the conclusion is, That some species or individual does not belong to such a genus ; and the argument is, That some attribute common to the whole genus does not belong to that species or individual.

In the third figure, the conclusion is, That such an attribute belongs to part of a genus ; and the argument is, That the attribute in question belongs to a species or individual which is part of that genus.

I apprehend, that, in this short view, every conclusion that falls within the compass of the three figures, as well as the mean of proof, is comprehended. The rules of all the figures might be easily deduced from it ; and it appears, that there

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is only one principle of reasoning in all the three ; so that it is not strange, that a fyllogism of one figure should be reduced to one of another figure.

The general principle in which the whole terminates, and of which every categorical fyllogism is only a particular application, is this, That what is affirmed or denied of the whole genus, may be affirmed or denied of every species and individual belonging to it. This is a principle of undoubted certainty indeed, but of no great depth. Aristotle and all the logicians assume it as an axiom or first principle, from which the fyllogistic system, as it were, takes its departure : and after a tedious voyage, and great expence of demonstration, it lands at last in this principle as its ultimate conclusion. *O curas hominum ! O quantum est in rebus inane !*

SECT. 6. *On Modal Syllogisms.*

Categorical propositions, besides their quantity and quality, have another affection, by which they are divided into pure and modal. In a pure proposition, the
predicate

predicate is barely affirmed or denied of the subject ; but in a modal proposition, the affirmation or negation is modified, by being declared to be necessary, or contingent, or possible, or impossible. These are the four modes observed by Aristotle, from which he denominates a proposition modal. His genuine disciples maintain, that these are all the modes that can affect an affirmation or negation, and that the enumeration is complete. Others maintain, that this enumeration is incomplete ; and that when an affirmation or negation is said to be certain or uncertain, probable or improbable, this makes a modal proposition, no less than the four modes of Aristotle. We shall not enter into this dispute ; but proceed to observe, that the epithets of *pure* and *modal* are applied to syllogisms as well as to propositions. A pure syllogism is that in which both premises are pure propositions. A modal syllogism is that in which either of the premises is a modal proposition.

The syllogisms of which we have already said so much, are those only which are pure as well as categorical. But when we consider, that through all the figures
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and modes, a fyllogism may have one premise modal of any of the four modes, while the other is pure, or it may have both premises modal, and that they may be either of the same mode or of different modes; what prodigious variety arises from all these combinations? Now it is the business of a logician, to shew how the conclusion is affected in all this variety of cases. Aristotle has done this in his First Analytics, with immense labour; and it will not be thought strange, that when he had employed only four chapters in discussing one hundred and ninety-two modes, true and false, of pure fyllogisms, he should employ fifteen upon modal fyllogisms.

I am very willing to excuse myself from entering upon this great branch of logic, by the judgement and example of those who cannot be charged either with want of respect to Aristotle, or with a low esteem of the fyllogistic art.

Keckerman, a famous Dantzican professor, who spent his life in teaching and writing logic, in his huge folio system of that science, published *ann.* 1600, calls the doctrine of the modals the *crux logi-*

corum. With regard to the scholastic doctors, among whom this was a proverb, *De modalibus non gustabit asinus*, he thinks it very dubious, whether they tortured most the modal syllogisms, or were most tortured by them. But those crabbed geniuses, says he, made this doctrine so very thorny, that it is fitter to tear a man's wits in pieces than to give them solidity. He desires it to be observed, that the doctrine of the modals is adapted to the Greek language. The modal terms were frequently used by the Greeks in their disquisitions; and, on that account, are so fully handled by Aristotle: but in the Latin tongue you shall hardly ever meet with them. Nor do I remember, in all my experience, says he, to have observed any man in danger of being foiled in a dispute, through his ignorance of the modals.

This author, however, out of respect to Aristotle, treats pretty fully of modal propositions, shewing how to distinguish their subject and predicate, their quantity and quality. But the modal syllogisms he passes over altogether.

Ludovicus Vives, whom I mention, not as a devotee of Aristotle, but on ac-

count of his own judgement and learning, thinks that the doctrine of modals ought to be banished out of logic, and remitted to grammar; and that if the grammar of the Greek tongue had been brought to a system in the time of Aristotle, that most acute philosopher would have saved the great labour he has bestowed on this subject.

Burgerflick, after enumerating five classes of modal syllogisms, observes, that they require many rules and cautions, which Aristotle hath handled diligently; but that as the use of them is not great and their rules difficult, he thinks it not worth while to enter into the discussion of them; recommending to those who would understand them, the most learned paraphrase of Joannes Monlorius upon the first book of the First Analytics.

All the writers of logic for two hundred years back that have fallen into my hands, have passed over the rules of modal syllogisms with as little ceremony. So that this great branch of the doctrine of syllogism, so diligently handled by Aristotle, fall into neglect, if not contempt, even while the doctrine of pure syllogisms continued

tinued in the highest esteem. Moved by these authorities, I shall let this doctrine rest in peace, without giving the least disturbance to its ashes.

SECT. 7. *On Syllogisms that do not belong to Figure and Mode.*

Aristotle gives some observations upon imperfect syllogisms: such as, the Enthimema, in which one of the premises is not expressed but understood: Induction, wherein we collect an universal from a full enumeration of particulars: and Examples, which are an imperfect induction. The logicians have copied Aristotle upon these kinds of reasoning, without any considerable improvement. But to compensate the modal syllogisms, which they have laid aside, they have given rules for several kinds of syllogism, of which Aristotle takes no notice. These may be reduced to two classes.

The first class comprehends the syllogisms into which any exclusive, restrictive, exceptive, or reduplicative proposition enters. Such propositions are by some called

impossible, by others, *imperfectly modal*. The rules given with regard to these are obvious, from a just interpretation of the propositions.

The second class is that of hypothetical syllogisms, which take that denomination from having a hypothetical proposition for one or both premises. Most logicians give the name of *hypothetical* to all complex propositions which have more terms than one subject, and one predicate. I use the word in this large sense; and mean by hypothetical syllogisms, all those in which either of the premises consists of more terms than two. How many various kinds there may be of such syllogisms, has never been ascertained. The logicians have given names to some; such as, the copulative, the conditional by some called *hypothetical*, and the disjunctive.

Such syllogisms cannot be tried by the rules of figure and mode. Every kind would require rules peculiar to itself. Logicians have given rules for some kinds; but there are many that have not so much as a name.

The Dilemma is considered by most logicians as a species of the disjunctive syllogism.

logism. A remarkable property of this kind is, that it may sometimes be happily retorted : it is, it seems, like a hand-grenade, which by dextrous management may be thrown back, so as to spend its force upon the assailant. We shall conclude this tedious account of syllogisms, with a dilemma mentioned by *A. Gellius*, and from him by many logicians, as insoluble in any other way.

“ Euathlus, a rich young man, desirous
“ of learning the art of pleading, applied
“ to Protagoras, a celebrated sophist, to
“ instruct him, promising a great sum of
“ money as his reward ; one half of which
“ was paid down ; the other half he
“ bound himself to pay as soon as he
“ should plead a cause before the judges,
“ and gain it. Protagoras found him a
“ very apt scholar ; but, after he had
“ made good progress, he was in no haste
“ to plead causes. The master, concei-
“ ving that he intended by this means to
“ shift off his second payment, took, as
“ he thought, a sure method to get the
“ better of his delay. He sued Euathlus
“ before the judges ; and, having opened
“ his cause at the bar, he pleaded to this
“ purpose.

“ purpose. O most foolish young man,
“ do you not see, that, in any event, I
“ must gain my point? for if the judges
“ give sentence for me, you must pay
“ by their sentence; if against me, the
“ condition of our bargain is fulfilled,
“ and you have no plea left for your de-
“ lay, after having pleaded and gained a
“ cause. To which Euathlus answered.
“ O most wise master, I might have a-
“ voided the force of your argument, by
“ not pleading my own cause. But, gi-
“ ving up this advantage, do you not see,
“ that whatever sentence the judges pass,
“ I am safe? If they give sentence for
“ me, I am acquitted by their sentence;
“ if against me, the condition of our bar-
“ gain is not fulfilled, by my pleading a
“ cause, and losing it. The judges, think-
“ ing the arguments unanswerable on
“ both sides, put off the cause to a long
“ day.”

C H. A P. V.

Account of the remaining books of the
Organon.

S E C T. I. *Of the Last Analytics.*

IN the first *Analytics*, syllogisms are considered in respect of their form; they are now to be considered in respect of their matter. The form lies in the necessary connection between the premises and the conclusion; and where such a connection is wanting, they are said to be informal, or vicious in point of form.

But where there is no fault in the form, there may be in the matter; that is, in the propositions of which they are composed, which may be true or false, probable or improbable.

When the premises are certain, and the conclusion drawn from them in due form, this is demonstration, and produces science. Such syllogisms are called *apodictical*;

tical; and are handled in the two books of the Last Analytics. When the premises are not certain, but probable only, such syllogisms are called *dialectical*; and of them he treats in the eight books of the Topicks. But there are some syllogisms which seem to be perfect both in matter and form, when they are not really so: as, a face may seem beautiful which is but painted. These being apt to deceive, and produce a false opinion, are called *sophistical*; and they are the subject of the book concerning Sophisms.

To return to the Last Analytics, which treat of demonstration and of science: We shall not pretend to abridge these books; for Aristotle's writings do not admit of abridgement: no man in fewer words can say what he says; and he is not often guilty of repetition. We shall only give some of his capital conclusions, omitting his long reasonings and nice distinctions, of which his genius was wonderfully productive.

All demonstration must be built upon principles already known; and these upon others of the same kind; until we come at last to first principles, which neither

can be demonstrated, nor need to be, being evident of themselves.

We cannot demonstrate things in a circle, supposing the conclusion by the premises, and the premises by the conclusion. Nor can there be an infinite number of middle terms between the first principle and the conclusion.

In all demonstration, the first principles, the conclusion, and all the intermediate propositions, must be necessary, general, and eternal truths: for of things fortuitous, contingent, or mutable, or of individual things, there is no demonstration.

Some demonstrations prove only, that the thing is thus affected; others prove, why it is thus affected. The former may be drawn from a remote cause, or from an effect: but the latter must be drawn from an immediate cause; and are the most perfect.

The first figure is best adapted to demonstration, because it affords conclusions universally affirmative; and this figure is commonly used by the mathematicians.

The demonstration of an affirmative proposition is preferable to that of a nega-

tive ; the demonstration of an universal to that of a particular ; and direct demonstration to that *ad absurdum*.

The principles are more certain than the conclusion.

There cannot be opinion and science of the same thing at the same time.

In the second book we are taught, that the questions that may be put with regard to any thing, are four: 1. Whether the thing be thus affected. 2. Why it is thus affected. 3. Whether it exists. 4. What it is.

The last of these questions Aristotle, in good Greek, calls the *What is it* of a thing. The schoolmen, in very barbarous Latin, called this, the *quiddity* of a thing. This quiddity, he proves by many arguments, cannot be demonstrated, but must be fixed by a definition. This gives occasion to treat of definition, and how a right definition should be formed. As an example, he gives a definition of the number *three*, and defines it to be the first odd number.

In this book he treats also of the four kinds of causes ; efficient, material, formal, and final.

Another thing treated of in this book is,
the

the manner in which we acquire first principles, which are the foundation of all demonstration. These are not innate, because we may be for a great part of life ignorant of them : nor can they be deduced demonstratively from any antecedent knowledge, otherwise they would not be first principles. Therefore he concludes, that first principles are got by induction, from the informations of sense. The senses give us informations of individual things, and from these by induction we draw general conclusions : for it is a maxim with Aristotle, That there is nothing in the understanding which was not before in some sense.

The knowledge of first principles, as it is not acquired by demonstration, ought not to be called science ; and therefore he calls it *intelligence*.

SECT. 2. *Of the Topics.*

The professed design of the Topics is, to shew a method by which a man may be able to reason with probability and con-

signify upon every question that can occur.

Every question is either about the genus of the subject, or its specific difference, or something proper to it, or something accidental.

To prove that this division is complete, Aristotle reasons thus: Whatever is attributed to a subject, it must either be, that the subject can be reciprocally attributed to it, or that it cannot. If the subject and attribute can be reciprocated, the attribute either declares what the subject is, and then it is a definition; or it does not declare what the subject is, and then it is a property. If the attribute cannot be reciprocated, it must be something contained in the definition, or not. If it be contained in the definition of the subject, it must be the genus of the subject, or its specific difference; for the definition consists of these two. If it be not contained in the definition of the subject, it must be an accident.

The furniture proper to fit a man for arguing dialectically may be reduced to these four heads: 1. Probable propositions of all sorts, which may on occasion be assumed
in

in an argument. 2. Distinctions of words which are nearly of the same signification. 3. Distinctions of things which are not so far asunder but that they may be taken for one and the same. 4. Similitudes.

The second and the five following books are taken up in enumerating the topics or heads of argument that may be used in questions about the genus, the definition, the properties, and the accidents of a thing; and occasionally he introduces the topics for proving things to be the same, or different; and the topics for proving one thing to be better or worse than another.

In this enumeration of topics, Aristotle has shewn more the fertility of his genius, than the accuracy of method. The writers of logic seem to be of this opinion: for I know none of them that has followed him closely upon this subject. They have considered the topics of argumentation as reducible to certain axioms. For instance, when the question is about the genus of a thing, it must be determined by some axiom about genus and species; when it is about a definition, it must be determined by some axiom relating to definition, and things defined: and so of other questions.

They

They have therefore reduced the doctrine of the topics to certain axioms or canons, and disposed these axioms in order under certain heads.

This method seems to be more commodious and elegant than that of Aristotle. Yet it must be acknowledged, that Aristotle has furnished the materials from which all the logicians have borrowed their doctrine of topics : and even Cicero, Quintilian, and other rhetorical writers, have been much indebted to the topics of Aristotle.

He was the first, as far as I know, who made an attempt of this kind : and in this he acted up to the magnanimity of his own genius, and that of ancient philosophy. Every subject of human thought had been reduced to ten categories ; every thing that can be attributed to any subject, to five predicables : he attempted to reduce all the forms of reasoning to fixed rules of figure and mode, and to reduce all the topics of argumentation under certain heads ; and by that means to collect as it were into one store all that can be said on one side or the other of every question, and to provide a grand arsenal, from
which

which all future combatants might be furnished with arms offensive and defensive in every cause, so as to leave no room to future generations to invent any thing new.

The last book of the Topics is a code of the laws according to which a syllogistical disputation ought to be managed, both on the part of the assailant and defendant. From which it is evident, that this philosopher trained his disciples to contend, not for truth merely, but for victory.

SECT. 3. *Of the book concerning Sophisms.*

A syllogism which leads to a false conclusion, must be vicious, either in matter or form: for from true principles nothing but truth can be justly deduced. If the matter be faulty, that is, if either of the premises be false, that premise must be denied by the defendant. If the form be faulty, some rule of syllogism is transgressed; and it is the part of the defendant to shew, what general or special rule it is that is transgressed. So that, if he be an able logician, he will be impregnable in the defence

defence of truth, and may resist all the attacks of the sophist. But as there are syllogisms which may seem to be perfect both in matter and form, when they are not really so, as a piece of money may seem to be good coin when it is adulterate; such fallacious syllogisms are considered in this treatise, in order to make a defendant more expert in the use of his defensive weapons.

And here the author, with his usual magnanimity, attempts to bring all the fallacies that can enter into a syllogism under thirteen heads; of which six lie in the diction or language, and seven not in the diction.

The fallacies in diction are, 1. When an ambiguous word is taken at one time in one sense, and at another time in another. 2. When an ambiguous phrase is taken in the same manner. 3. and 4. are ambiguities in syntax; when words are conjoined in syntax that ought to be disjoined; or disjoined when they ought to be conjoined. 5. is an ambiguity in prosody, accent, or pronunciation. 6. An ambiguity arising from some figure of speech.

When a sophism of any of these kinds is translated into another language, or even rendered into unambiguous expressions in the same language, the fallacy is evident, and the syllogism appears to have four terms.

The seven fallacies which are said not to be in the diction, but in the thing, have their proper names in Greek and in Latin, by which they are distinguished. Without minding their names, we shall give a brief account of their nature.

1. The first is, Taking an accidental conjunction of things for a natural or necessary connection: as, when from an accident we infer a property; when from an example we infer a rule; when from a single act we infer a habit.

2. Taking that absolutely which ought to be taken comparatively, or with a certain limitation. The construction of language often leads into this fallacy: for in all languages, it is common to use absolute terms to signify things that carry in them some secret comparison; or to use unlimited terms, to signify what from its nature must be limited.

3. Taking that for the cause of a thing

which is only an occasion, or concomitant.

4. *Begging the question.* This is done, when the thing to be proved, or some thing equivalent, is assumed in the premises.

5. *Mistaking the question.* When the conclusion of the syllogism is not the thing that ought to be proved, but something else that is mistaken for it.

6. When that which is not a consequence is mistaken for a consequence; as if, because all Africans are black, it were taken for granted that all blacks are Africans.

7. The last fallacy lies in propositions that are complex, and imply two affirmations, whereof one may be true, and the other false; so that whether you grant the proposition, or deny it, you are intangled; as when it is affirmed, that such a man has left off playing the fool. If it be granted, it implies, that he did play the fool formerly. If it be denied, it implies, or seems to imply, that he plays the fool still.

In this enumeration, we ought, in justice to Aristotle, to expect only the fallacies incident to categorical syllogisms.

And

And I do not find, that the logicians have made any additions to it when taken in this view ; although they have given some other fallacies that are incident to syllogisms of the hypothetical kind, particularly the fallacy of an incomplete enumeration in disjunctive syllogisms and dilemmas.

The different species of sophisms above mentioned are not so precisely defined by Aristotle, or by subsequent logicians, but that they allow of great latitude in the application ; and it is often dubious under what particular species a sophistical syllogism ought to be classed. We even find the same example brought under one species by one author, and under another species by another. Nay, what is more strange, Aristotle himself employs a long chapter in proving by a particular induction, that all the seven may be brought under that which we have called *mistaking the question*, and which is commonly called *ignoratio elenchi*. And indeed the proof of this is easy, without that laborious detail which Aristotle uses for the purpose : for if you lop off from the conclusion of a sophistical syllogism all that is not sup-

ported by the premises, the conclusion, in that case, will always be found different from that which ought to have been proved; and so it falls under the *ignoratio e-
lenchi*.

It was probably Aristotle's aim, to reduce all the possible variety of sophisms, as he had attempted to do of just syllogisms, to certain definite species: but he seems to be sensible that he had fallen short in this last attempt. When a genus is properly divided into its species, the species should not only, when taken together, exhaust the whole genus; but every species should have its own precinct so accurately defined, that one shall not encroach upon another. And when an individual can be said to belong to two or three different species, the division is imperfect; yet this is the case of Aristotle's division of the sophisms, by his own acknowledgement. It ought not therefore to be taken for a division strictly logical. It may rather be compared to the several species or forms of action invented in law for the redress of wrongs. For every wrong there is a remedy in law, by one action or another: but sometimes a man
may

may take his choice among several different actions. So every sophistical syllogism may, by a little art, be brought under one or other of the species mentioned by Aristotle, and very often you may take your choice of two or three.

Besides the enumeration of the various kinds of sophisms, there are many other things in this treatise concerning the art of managing a syllogistical dispute with an antagonist. And indeed, if the passion for this kind of litigation, which reigned for so many ages, should ever again lift up its head, we may predict, that the Organon of Aristotle will then become a fashionable study: for it contains such admirable materials and documents for this art, that it may be said to have brought it to a science.

The conclusion of this treatise ought not to be overlooked: it manifestly relates, not to the present treatise only, but also to the whole analytics and topics of the author. I shall therefore give the substance of it.

“ Of those who may be called inventors,
“ some have made important additions to
“ things long before begun, and carried
“ on

" on through a course of ages, others
 " have given a small beginning to things
 " which, in succeeding times, will be
 " brought to greater perfection. The be-
 " ginning of a thing, though small, is the
 " chief part of it, and requires the great-
 " est degree of invention; for it is easy
 " to make additions to inventions once
 " begun. Now with regard to the dia-
 " lectical art, there was not something
 " done, and something remaining to be
 " done. There was absolutely nothing
 " done: for those who professed the art
 " of disputation, had only a set of ora-
 " tions composed, and of arguments, and
 " of captious questions, which might suit
 " many occasions. These their scholars
 " soon learned, and fitted to the occasion.
 " This was not to teach you the art, but
 " to furnish you with the materials pro-
 " duced by the art: as if a man profes-
 " sing to teach you the art of making
 " shoes, should bring you a parcel of
 " shoes of various sizes and shapes, from
 " which you may provide those who want.
 " This may have its use; but it is not to
 " teach the art of making shoes. And
 " indeed, with regard to rhetorical de-
 " clamation,

"clamation, there are many precepts
"handed down from ancient times; but
"with regard to the construction of syl-
"logisms, not one."

"We have therefore employed much
"time and labour upon this subject; and
"if our system appear to you not to be
"in the number of those things, which,
"being before carried a certain length,
"were left to be perfected; we hope for
"your favourable acceptance of what is
"done, and your indulgence in what is
"left imperfect."

CHAPTER VI.

Reflections on the Utility of Logic, and
the Means of its Improvement.

SECT. I. Of the Utility of Logic.

MEN rarely leave one extreme without
running into the contrary. It is no
wonder, therefore, that the excessive ad-
miration of Aristotle, which continued for

so many ages, should end in an undue contempt; and that the high esteem of logic as the grand engine of science, should at last make way for too unfavourable an opinion, which seems now prevalent, of its being unworthy of a place in a liberal education. Those who think according to the fashion, as the greatest part of men do, will be as prone to go into this extreme, as their grandfathers were to go into the contrary.

Laying aside prejudice, whether fashionable or unfashionable, let us consider whether logic is, or may be made, subservient to any good purpose. Its professed end is, to teach men to think, to judge, and to reason, with precision and accuracy. No man will say that this is a matter of no importance; the only thing therefore that admits of doubt, is, whether it can be taught.

To resolve this doubt, it may be observed, that our rational faculty is the gift of God, given to men in very different measure. Some have a large portion, some a less; and where there is a remarkable defect of the natural power, it cannot be supplied by any culture. But this natural
I power,

power, even where it is the strongest, may lie dead for want of the means of improvement: a savage may have been born with as good faculties as a Bacon or a Newton: but his talent was buried, being never put to use; while theirs was cultivated to the best advantage.

It may likewise be observed, that the chief mean of improving our rational power, is the vigorous exercise of it, in various ways and in different subjects, by which the habit is acquired of exercising it properly. Without such exercise, and good sense over and above, a man who has studied logic all his life, may after all be only a petulant wrangler, without true judgement or skill of reasoning in any science.

I take this to be Locke's meaning, when in his *Thoughts on Education* he says, "If you would have your son to reason well, let him read Chillingworth." The state of things is much altered since Locke wrote. Logic has been much improved, chiefly by his writings; and yet much less stress is laid upon it, and less time consumed in it. His counsel, therefore, was judicious and seasonable; to wit,

That the improvement of our reasoning power is to be expected much more from an intimate acquaintance with the authors who reason the best, than from studying voluminous systems of logic. But if he had meant, that the study of logic was of no use nor deserved any attention, he surely would not have taken the pains to have made so considerable an addition to it, by his *Essay on the Human Understanding*, and by his *Thoughts on the Conduct of the Understanding*. Nor would he have remitted his pupil to Chillingworth, the acutest logician as well as the best reasoner of his age; and one who, in innumerable places of his excellent book, without pedantry even in that pedantic age, makes the happiest application of the rules of logic, for unraveling the sophistical reasoning of his antagonist.

Our reasoning power makes no appearance in infancy; but as we grow up, it unfolds itself by degrees, like the bud of a tree. When a child first draws an inference, or perceives the force of an inference drawn by another, we may call this *the birth of his reason*: but it is yet like a new-born babe, weak and tender; it must
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be cherished, carried in arms, and have food of easy digestion, till it gather strength.

I believe no man remembers the birth of his reason : but it is probable that his decisions are at first weak and wavering ; and, compared with that steady conviction which he acquires in ripe years, are like the dawn of the morning compared with noon-day. We see that the reason of children yields to authority, as a reed to the wind ; nay, that it clings to it, and leans upon it, as if conscious of its own weakness.

When reason acquires such strength as to stand on its own bottom, without the aid of authority or even in opposition to authority, this may be called its *manly age*. But in most men, it hardly ever arrives at this period. Many, by their situation in life, have not the opportunity of cultivating their rational powers. Many, from the habit they have acquired of submitting their opinions to the authority of others, or from some other principle which operates more powerfully than the love of truth, suffer their judgement to be carried along to the end of their days, either by

the authority of a leader, or of a party, or of the multitude, or by their own passions. Such persons, however learned, however acute, may be said to be all their days children in understanding. They reason, they dispute, and perhaps write; but it is not that they may find the truth; but that they may defend opinions which have descended to them by inheritance, or into which they have fallen by accident, or been led by affection.

I agree with Mr Locke, that there is no study better fitted to exercise and strengthen the reasoning powers, than that of the mathematical sciences; for two reasons; first, Because there is no other branch of science which gives such scope to long and accurate trains of reasoning; and, secondly, Because in mathematics there is no room for authority, nor for prejudice of any kind, which may give a false bias to the judgement.

When a youth of moderate parts begins to study Euclid, every thing at first is new to him. His apprehension is unsteady: his judgement is feeble; and rests partly upon the evidence of the thing, and partly upon the authority of his teacher. But
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every time he goes over the definitions, the axioms, the elementary propositions, more light breaks in upon him: the language becomes familiar, and conveys clear and steady conceptions: the judgement is confirmed: he begins to see what demonstration is; and it is impossible to see it without being charmed with it. He perceives it to be a kind of evidence that has no need of authority to strengthen it. He finds himself emancipated from that bondage; and exults so much in this new state of independence, that he spurns at authority, and would have demonstration for every thing; until experience teaches him, that this is a kind of evidence that cannot be had in most things; and that in his most important concerns, he must rest contented with probability.

As he goes on in mathematics, the road of demonstration becomes smooth and easy: he can walk in it firmly, and take wider steps: and at last he acquires the habit, not only of understanding a demonstration, but of discovering and demonstrating mathematical truths.

Thus, a man, without rules of logic, may acquire a habit of reasoning justly in mathematics;

mathematics ; and, I believe, he may, by like means, acquire a habit of reasoning justly in mechanics, in jurisprudence, in politics, or in any other science. Good sense, good examples, and assiduous exercise, may bring a man to reason justly and acutely in his own profession, without rules.

But if any man think, that from this concession he may infer the inutility of logic, he betrays a great want of that art by this inference : for it is no better reasoning than this, That because a man may go from Edinburgh to London by the way of Paris, therefore any other road is useless.

There is perhaps no practical art which may not be acquired, in a very considerable degree, by example and practice, without reducing it to rules. But practice, joined with rules, may carry a man on in his art farther and more quickly, than practice without rules. Every ingenious artist knows the utility of having his art reduced to rules, and by that means made a science. He is thereby enlightened in his practice, and works with more assurance. By rules, he sometimes corrects
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his own errors, and often detects the errors of others : he finds them of great use to confirm his judgement, to justify what is right, and to condemn what is wrong.

Is it of no use in reasoning, to be well acquainted with the various powers of the human understanding, by which we reason ? Is it of no use, to resolve the various kinds of reasoning into their simple elements ; and to discover, as far as we are able, the rules by which these elements are combined in judging and in reasoning ? Is it of no use, to mark the various fallacies in reasoning, by which even the most ingenious men have been led into error ? It must surely betray great want of understanding, to think these things useless or unimportant. These are the things which logicians have attempted ; and which they have executed ; not indeed so completely as to leave no room for improvement, but in such a manner as to give very considerable aid to our reasoning powers. That the principles laid down with regard to definition and division, with regard to the conversion and opposition of propositions and the general rules of reasoning, are not without use, is sufficiently

eiently apparent from the blunders committed by those who disdain any acquaintance with them.

Although the art of categorical fyllogism is better fitted for scholastic litigation, than for real improvement in knowledge, it is a venerable piece of antiquity, and a great effort of human genius. We admire the pyramids of Egypt, and the wall of China, tho' uselefs burdens upon the earth. We can bear the most minute description of them, and travel hundreds of leagues to see them. If any person should with sacrilegious hands destroy or deface them, his memory would be had in abhorrence. The predicaments and predicables, the rules of fyllogism, and the topics, have a like title to our veneration as antiquities: they are uncommon efforts, not of human power, but of human genius; and they make a remarkable period in the progress of human reason.

The prejudice against logic has probably been strengthened by its being taught too early in life. Boys are often taught logic as they are taught their creed, when it is an exercise of memory only, without understanding. One may as well expect

to understand grammar before he can speak, as to understand logic before he can reason. It must even be acknowledged, that commonly we are capable of reasoning in mathematics more early than in logic. The objects presented to the mind in this science, are of a very abstract nature, and can be distinctly conceived only when we are capable of attentive reflection upon the operations of our own understanding, and after we have been accustomed to reason. There may be an elementary logic, level to the capacity of those who have been but little exercised in reasoning; but the most important parts of this science require a ripe understanding, capable of reflecting upon its own operations. Therefore to make logic the first branch of science that is to be taught, is an old error that ought to be corrected.

SECT. 2. *Of the Improvement of Logic.*

In compositions of human thought expressed by speech or by writing, whatever is excellent and whatever is faulty, fall within the province, either of grammar,

or of rhetoric, or of logic. Propriety of expression is the province of grammar; grace, elegance, and force, in thought and in expression, are the province of rhetoric; justness and accuracy of thought are the province of logic.

The faults in composition, therefore, which fall under the censure of logic, are obscure and indistinct conceptions, false judgement, inconclusive reasoning, and all improprieties in distinctions, definitions, division, or method. To aid our rational powers, in avoiding these faults and in attaining the opposite excellencies, is the end of logic; and whatever there is in it that has no tendency to promote this end, ought to be thrown out.

The rules of logic being of a very abstract nature, ought to be illustrated by a variety of real and striking examples taken from the writings of good authors. It is both instructive and entertaining, to observe the virtues of accurate composition in writers of fame. We cannot see them, without being drawn to the imitation of them, in a more powerful manner than we can be by dry rules. Nor are the faults of such writers, less instructive or
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less powerful monitors. A wreck, left upon a shoal or upon a rock, is not more useful to the sailor, than the faults of good writers, when set up to view, are to those who come after them. It was a happy thought in a late ingenious writer of English grammar, to collect under the several rules; examples of bad English found in the most approved authors. It were to be wished that the rules of logic were illustrated in the same manner. By these means, a system of logic would become a repository; wherein whatever is most acute in judging and in reasoning, whatever is most accurate in dividing, distinguishing, and defining, should be laid up and disposed in order for our imitation; and wherein the false steps of eminent authors should be recorded for our admonition.

After men had laboured in the search of truth near two thousand years by the help of syllogisms, Lord Bacon proposed the method of induction, as a more effectual engine for that purpose. His *Novum Organum* gave a new turn to the thoughts and labours of the inquisitive, more remarkable and more useful than that which

the *Organum* of Aristotle had given before; and may be considered as a second grand era in the progress of human reason.

The art of syllogism produced numberless disputes; and numberless sects, who fought against each other with much animosity, without gaining or losing ground, but did nothing considerable for the benefit of human life. The art of induction, first delineated by Lord Bacon, produced numberless laboratories and observatories; in which Nature has been put to the question by thousands of experiments, and forced to confess many of her secrets, that before were hid from mortals. And by these arts have been improved, and human knowledge wonderfully increased.

In reasoning by syllogism, from general principles we descend to a conclusion, virtually contained in them. The process of induction is more arduous; being an ascent from particular premises to a general conclusion. The evidence of such general conclusions is probable only, not demonstrative: but when the induction is sufficiently copious, and carried on according

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to the rules of art, it forces conviction no less than demonstration itself does.

The greatest part of human knowledge rests upon evidence of this kind. Indeed we can have no other for general truths which are contingent in their nature, and depend upon the will and ordination of the maker of the world. He governs the world he has made, by general laws. The effects of these laws in particular phenomena, are open to our observation ; and by observing a train of uniform effects with due caution, we may at last decypher the law of nature by which they are regulated.

Lord Bacon has displayed no less force of genius in reducing to rules this method of reasoning, than Aristotle did in the method of syllogism. His *Novum Organum* ought therefore to be held as a most important addition to the ancient logic. Those who understand it, and enter into its spirit, will be able to distinguish the chaff from the wheat in philosophical disquisitions into the works of God. They will learn to hold in due contempt all hypotheses and theories, the creatures of human imagination ; and to respect nothing but

but facts sufficiently vouched, or conclusions drawn from them by a fair and chaste interpretation of nature.

Most arts have been reduced to rules, after they had been brought to a considerable degree of perfection by the natural sagacity of artists; and the rules have been drawn from the best examples of the art, that had been before exhibited: but the art of philosophical induction was delineated by Lord Bacon in a very ample manner, before the world had seen any tolerable example of it. This, altho' it adds greatly to the merit of the author, must have produced some obscurity in the work, and a defect of proper examples for illustration. This defect may now be easily supplied, from those authors who, in their philosophical disquisitions, have the most strictly pursued the path pointed out in the *Novum Organum*. Among these Sir Isaac Newton appears to hold the first rank; having, in the third book of his *Principia* and in his *Optics*, had the rules of the *Novum Organum* constantly in his eye.

I think Lord Bacon was also the first who endeavoured to reduce to a system the prejudices or biases of the mind, which

which are the causes of false judgement; and which he calls *the idols of the human understanding*. Some late writers of logic have very properly introduced this into their system; but it deserves to be more copiously handled, and to be illustrated by real examples.

It is of great consequence to accurate reasoning, to distinguish first principles which are to be taken for granted, from propositions which require proof. All the real knowledge of mankind may be divided into two parts: the first consisting of self-evident propositions; the second, of those which are deduced by just reasoning from self-evident propositions. The line that divides these two parts ought to be marked as distinctly as possible; and the principles that are self-evident reduced, as far as can be done, to general axioms. This has been done in mathematics from the beginning, and has tended greatly to the advancement of that science. It has lately been done in natural philosophy: and by this means that science has advanced more in an hundred and fifty years, than it had done before in two thousand. Every science is in an unformed state until its

its first principles are ascertained: after which, it advances regularly, and secures the ground it has gained.

Altho' first principles do not admit of direct proof, yet there must be certain marks and characters, by which those that are truly such may be distinguished from counterfeits. These marks ought to be described, and applied, to distinguish the genuine from the spurious.

In the ancient philosophy, there is a redundancy, rather than a defect, of first principles. Many things were assumed under that character without a just title: That nature abhors a *vacuum*; That bodies do not gravitate in their proper place; That the heavenly bodies undergo no change; That they move in perfect circles, and with an equable motion. Such principles as these were assumed in the Peripatetic philosophy, without proof, as if they were self-evident.

Des Cartes, sensible of this weakness in the ancient philosophy, and desirous to guard against it in his own system, resolved to admit nothing until his assent was forced by irresistible evidence. The first thing that he found to be certain and e-

vident was, that he thought, and reasoned, and doubted. He found himself under a necessity of believing the existence of those mental operations of which he was conscious : and having thus found sure footing in this one principle of consciousness, he rested satisfied with it, hoping to be able to build the whole fabric of his knowledge upon it ; like Archimedes, who wanted but one fixed point to move the whole earth. But the foundation was too narrow ; and in his progress he unawares assumes many things less evident than those which he attempts to prove. Altho' he was not able to suspect the testimony of consciousness ; yet he thought the testimony of sense, of memory, and of every other faculty, might be suspected, and ought not to be received until proof was brought that they are not fallacious. Therefore he applies these faculties, whose character is yet in question, to prove, That there is an infinitely perfect Being, who made him, and who made his senses, his memory, his reason, and all his faculties ; That this Being is no deceiver, and therefore could not give him faculties that are

fallacious ; and that on this account they deserve credit.

It is strange, that this philosopher, who found himself under a necessity of yielding to the testimony of consciousness, did not find the same necessity of yielding to the testimony of his senses, his memory, and his understanding : and that while he was certain that he doubted, and reasoned, he was uncertain whether two and three made five, and whether he was dreaming or awake. It is more strange, that so acute a reasoner should not perceive, that his whole train of reasoning to prove that his faculties were not fallacious, was mere sophistry ; for if his faculties were fallacious, they might deceive him in this train of reasoning ; and so the conclusion, That they were not fallacious, was only the testimony of his faculties in their own favour, and might be a fallacy.

It is difficult to give any reason for distrusting our other faculties, that will not reach consciousness itself. And he who distrusts the faculties of judging and reasoning which God hath given him, must even rest in his scepticism, till he
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come to a sound mind, or until God give him new faculties to fit in judgement upon the old. If it be not a first principle, That our faculties are not fallacious, we must be absolute sceptics : for this principle is incapable of proof ; and if it is not certain, nothing else can be certain.

Since the time of Des Cartes, it has been fashionable with those who dealt in abstract philosophy, to employ their invention in finding philosophical arguments, either to prove those truths which ought to be received as first principles, or to overturn them : and it is not easy to say, whether the authority of first principles is more hurt by the first of these attempts, or by the last : for such principles can stand secure only upon their own bottom ; and to place them upon any other foundation than that of their intrinsic evidence, is in effect to overturn them.

I have lately met with a very sensible and judicious treatise, wrote by Father Buffier about fifty years ago, concerning first principles and the source of human judgements, which, with great propriety, he prefixed to his treatise of logic. And

